Service manual

Thermal-Transfer-Printer

vario 104/8

vario 107/12

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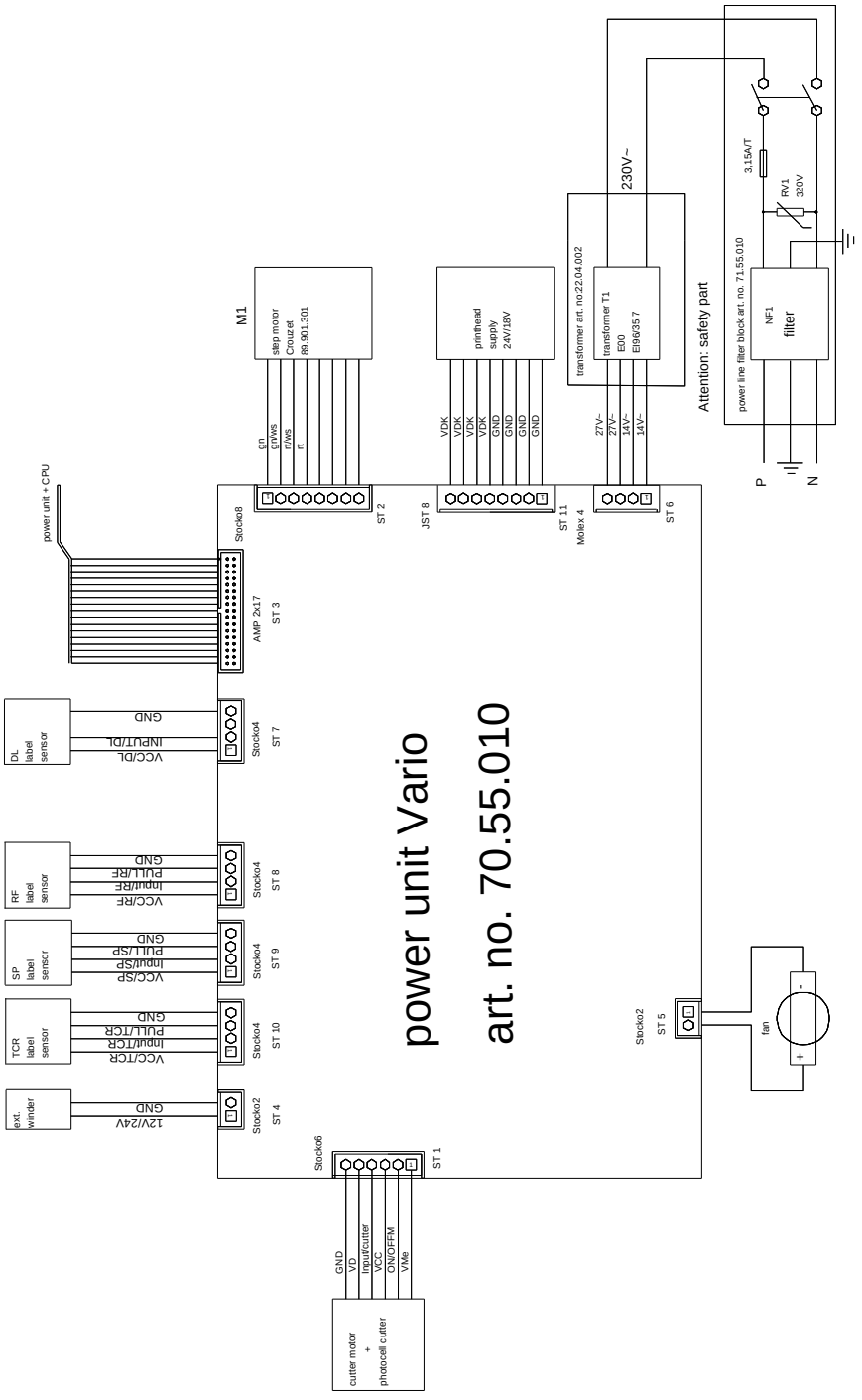
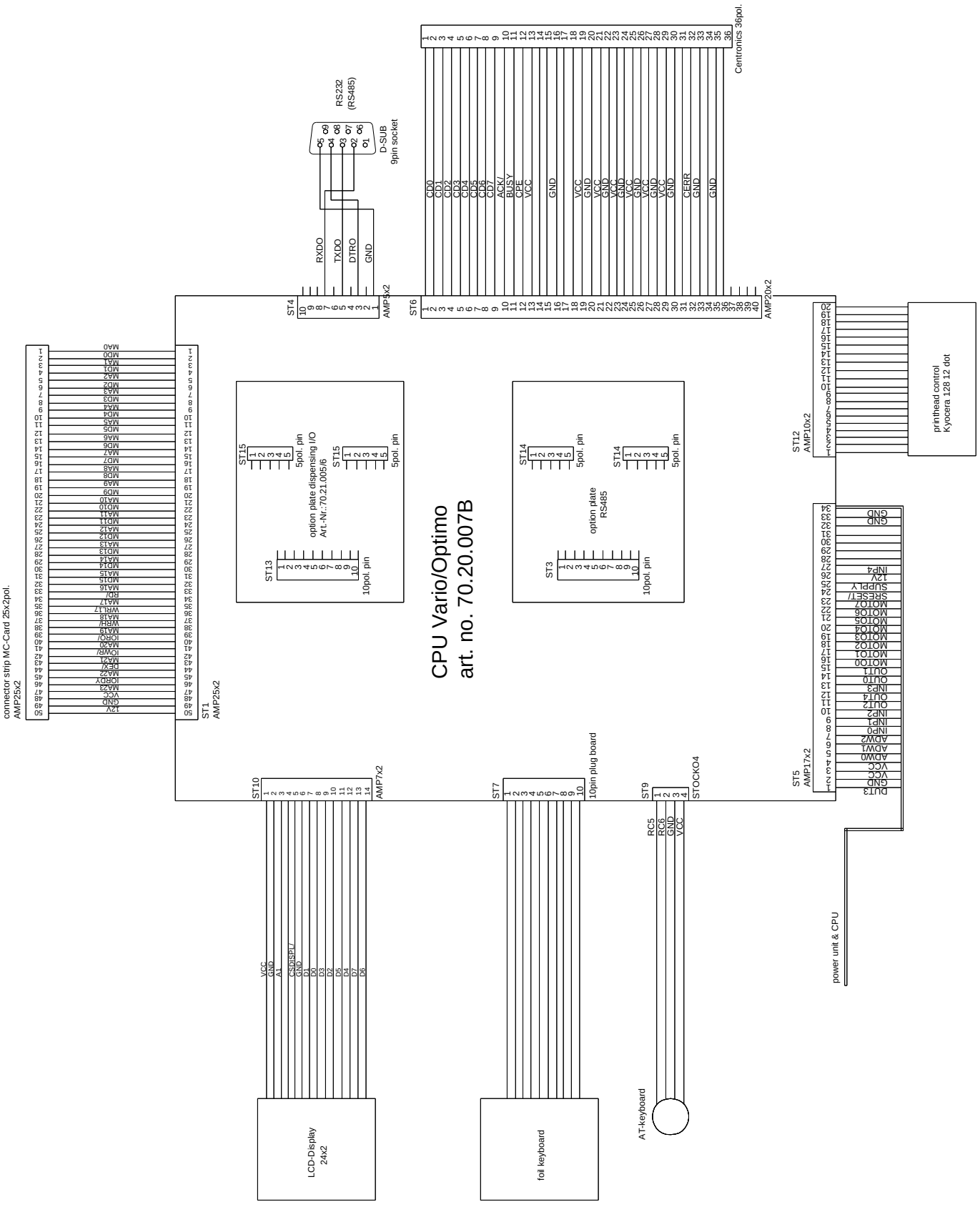
1. Electronics

1.1. Wiring diagrams

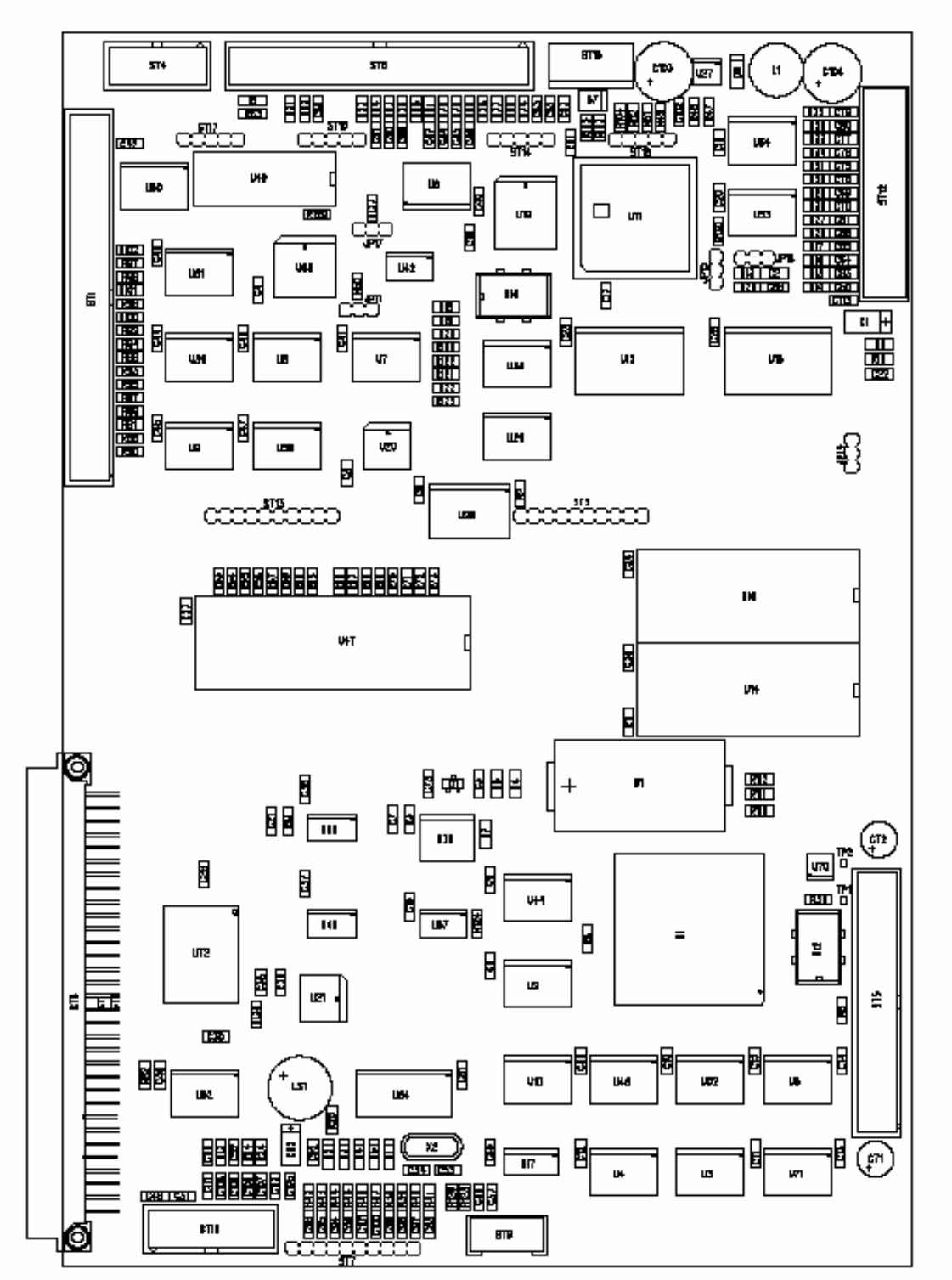
1.1.1. Wiring diagram power unit



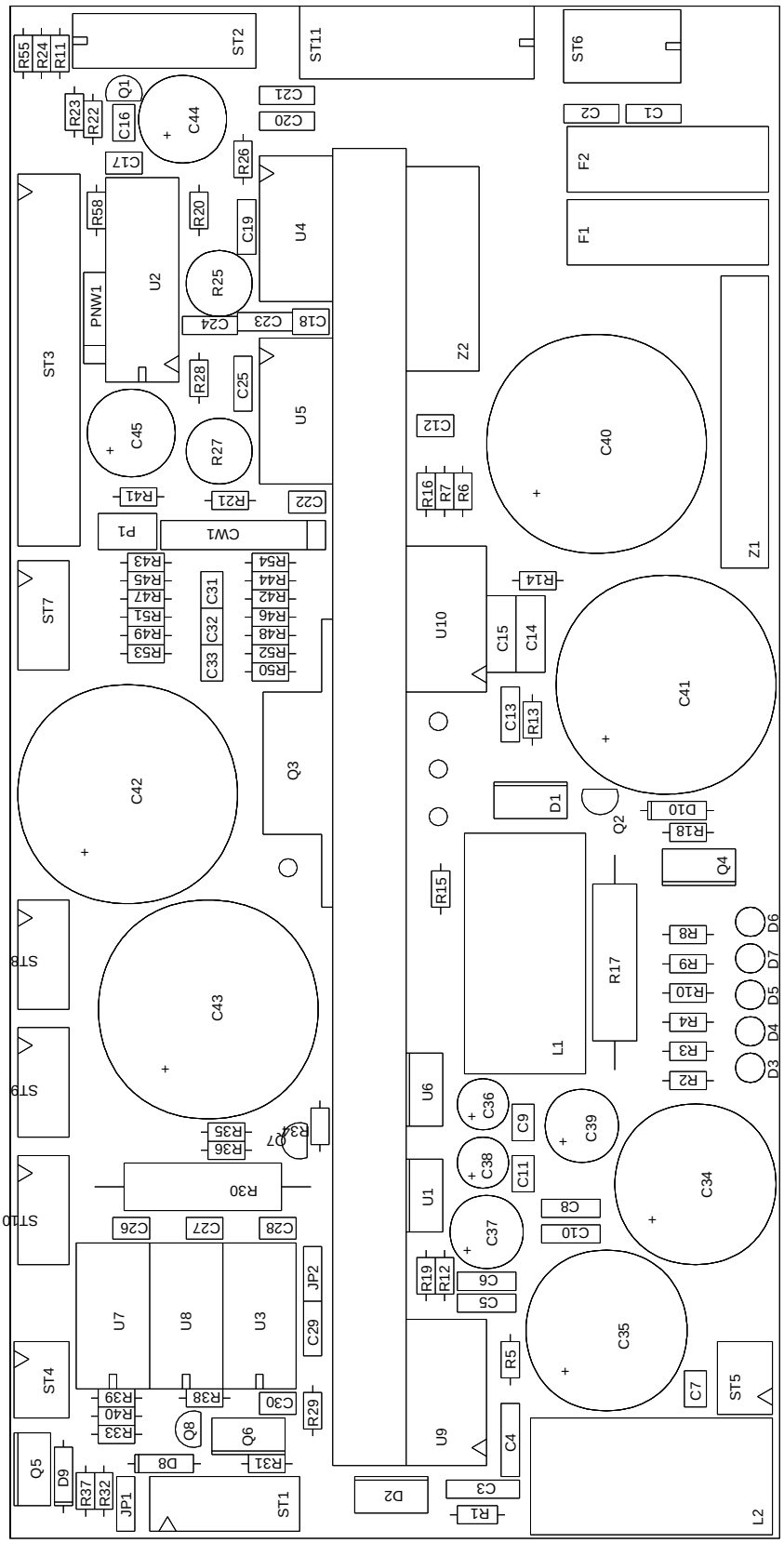
1.1.2. Wiring diagram CPU



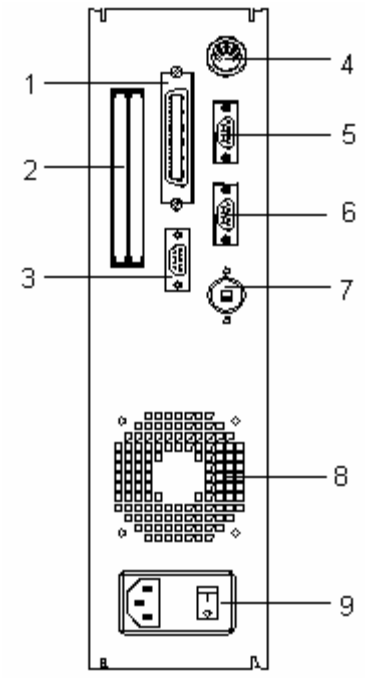
1.2. Component parts of CPU



1.3. Component parts of power supply



1.4. Connector assignment rear panel

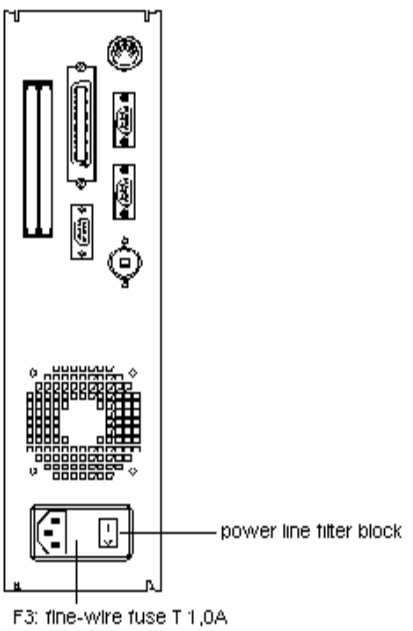


1 = Centronics interface
2 = Memory-Card slot A and B (Option)
3 = serial interface RS 232
4 = socket for PC keyboard
5 = external input
6 = external output
7 = socket for rewinding unit
8 = fan
9 = power supply with ON/OFF switch

1.5. Changing of fuses

1.5.1. Primary fuse

rear panel vario



The primary fuse is in the power line filter block and accessible from outside

After plugging out the cover can be opened.

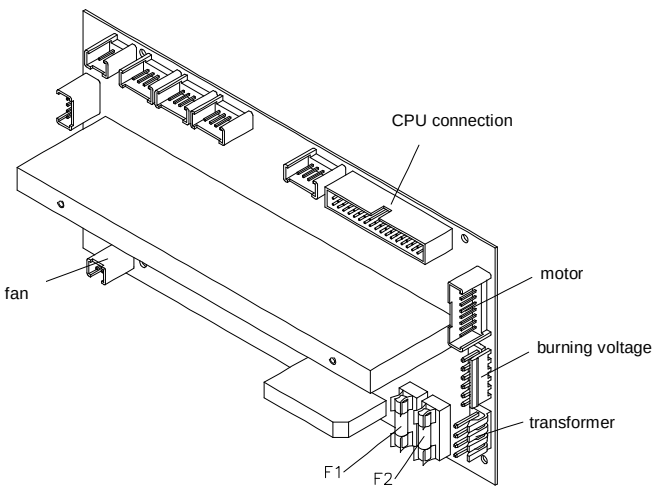
There behind you will find the fuse-switch, which has to be pulled out to change the fuse.

1.5.2. Secondary fuse

Attention: The machine should only be opened by competent staff.
Plug out before removing the cover!

After removing the cover the CPU plate is visible. Underneath you will find the power supply board with 2 secondary fuses. After removing the cover it will be accessible.

F1: fine-wire fuse T 2,5 A fuse for 5 V and 12 V supply
F2: fine-wire fuse T 10,0 A fuse for motor voltage (33 V) and burning voltage (24 V) and cutter res. rewinding unit



1.6. Check-points

1.6.1. Voltage supply power board

check-point		description	value
ST3	PIN 3, 4	VCC	5V
ST3	PIN 26	12V	12V
ST3	PIN 3	24V	24V
ST11	PIN 1-3	VDK	24V
U10	PIN 3	VIN	~ 33V
ST3	PIN 33, 34	GND	0V
ST3	PIN 25	SUPPLY 1	~ 19V

1.6.2. Voltage supply CPU

check-point		description	value
ST5	PIN 2, 33, 34	GND	0V
ST5	PIN 3, 4	VCC	5V
ST5	PIN 26	12V	12V
ST5	PIN 25	SUPPLY	~ 19V

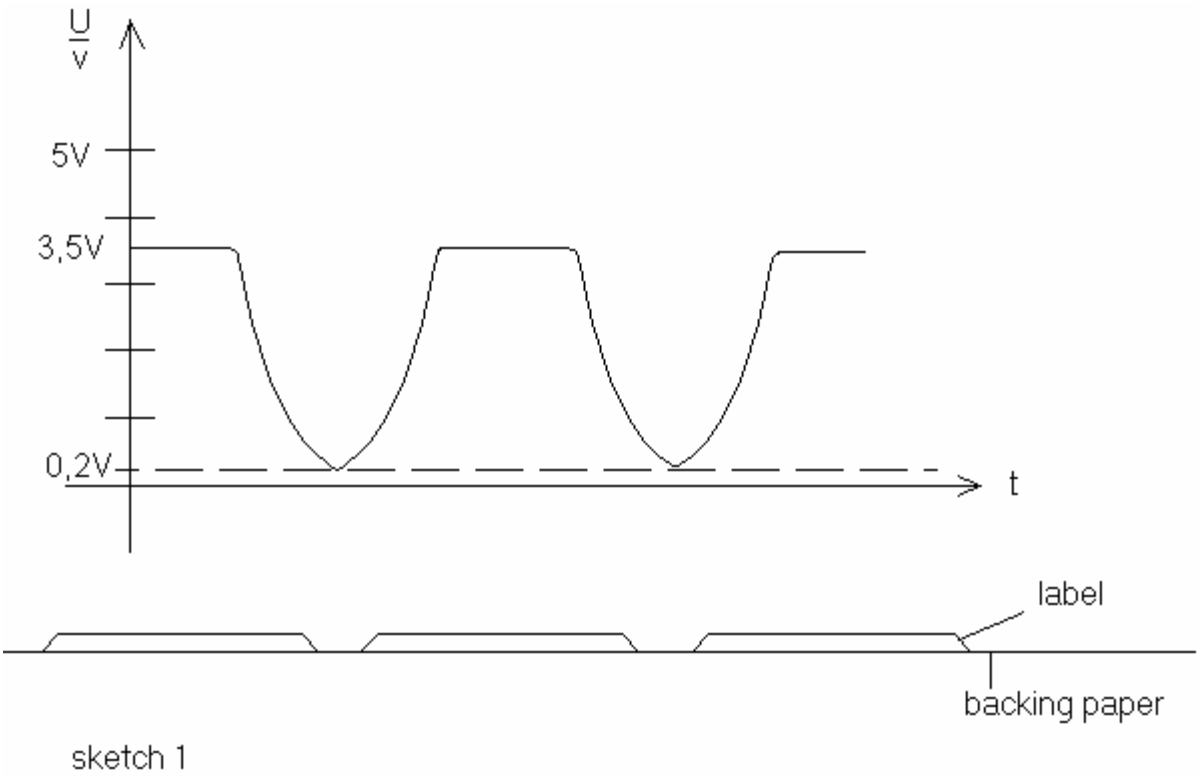
1.6.3. Photocells

Label photocell transmission

ST7:	PIN 4	VIN	~1,2V
ST7:	PIN 3	INPUT	see below
ST7:	PIN 1	GND	0V

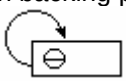
Depending on the transparency of the label res. backing paper the voltage at the input of the AD converter is changing.

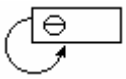
Sketch 1 shows a typical voltage wave form at "INPUT", measurable at ST5 PIN 5 (CPU).



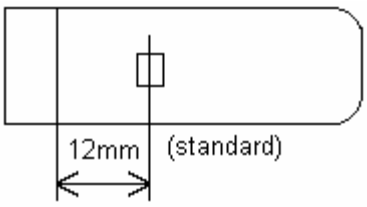
sketch 1

In case the adjusted value of the sending current of the photocell is insufficient, e.g. when using extremely thick or thin backing paper, it can be adjusted by changing P1 (power unit plate).

Rotation to the right  adjustment for thick backing paper

Rotation to the left  adjustment for thin backing paper

The "INPUT" level can be displayed in menu item "Service functions" (label parameter) under "LS: x,x".

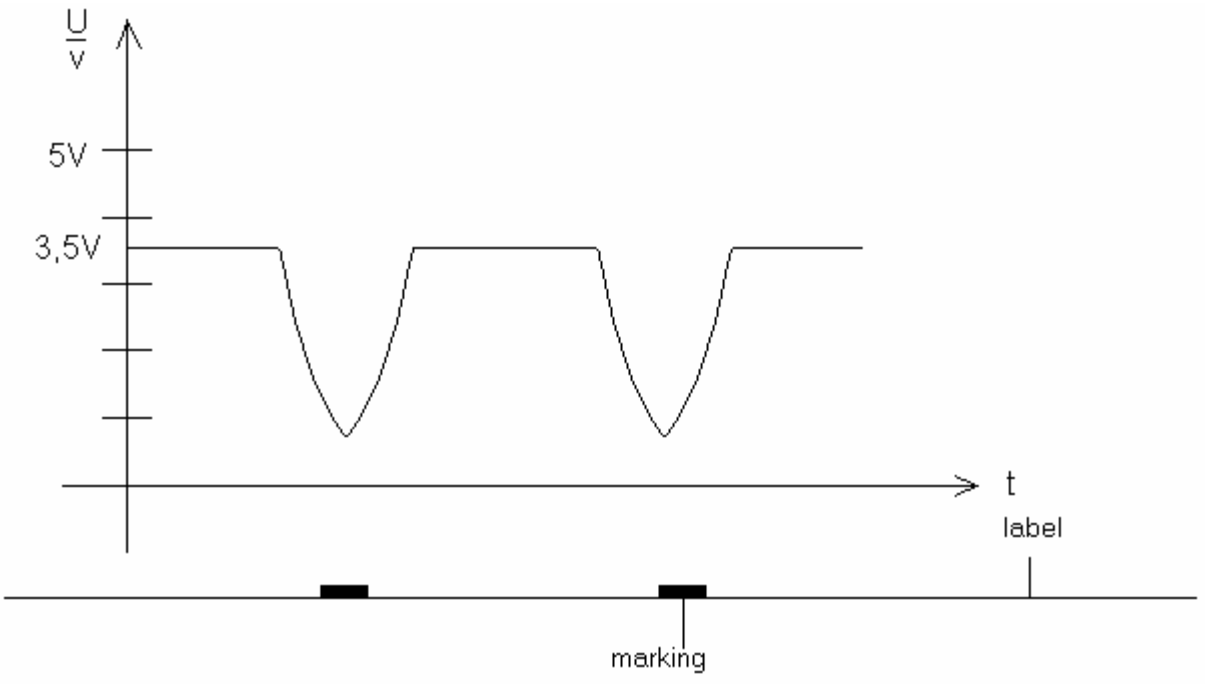


measurement of photo-cell

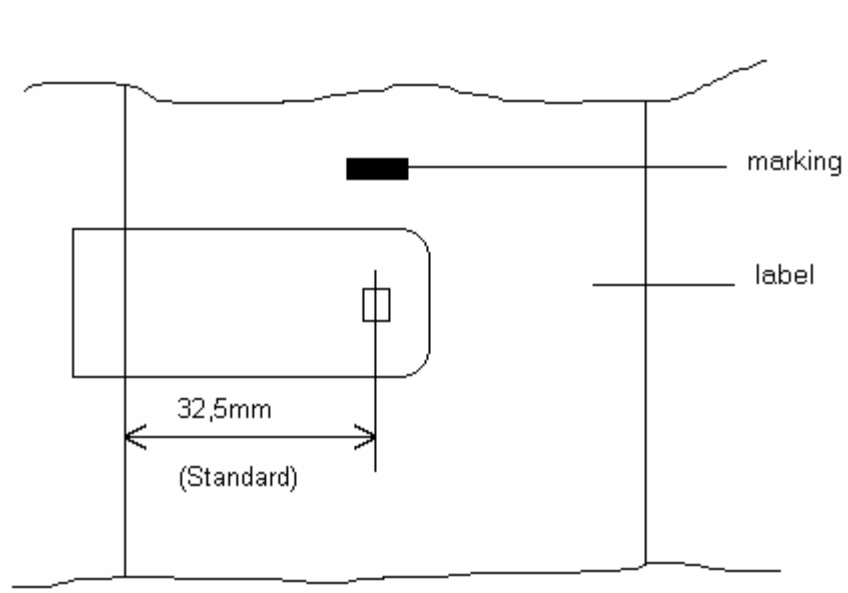
Label photocell reflexion

ST8:	PIN 1	VCC	5V
ST8:	PIN 2	INPUT	see sketch
ST8:	PIN 3	PULL-UP	~ 2V
ST8:	PIN 4	GND	0V

The voltage wave form at "INPUT" is similar to the one described under A and is measurable at ST5 PIN 6 on the CPU.



It has to be considered that the marking for the reflexion photocell must be in a distance of 32,5 mm to the interior rim, so that the photocell recognizes the marking.

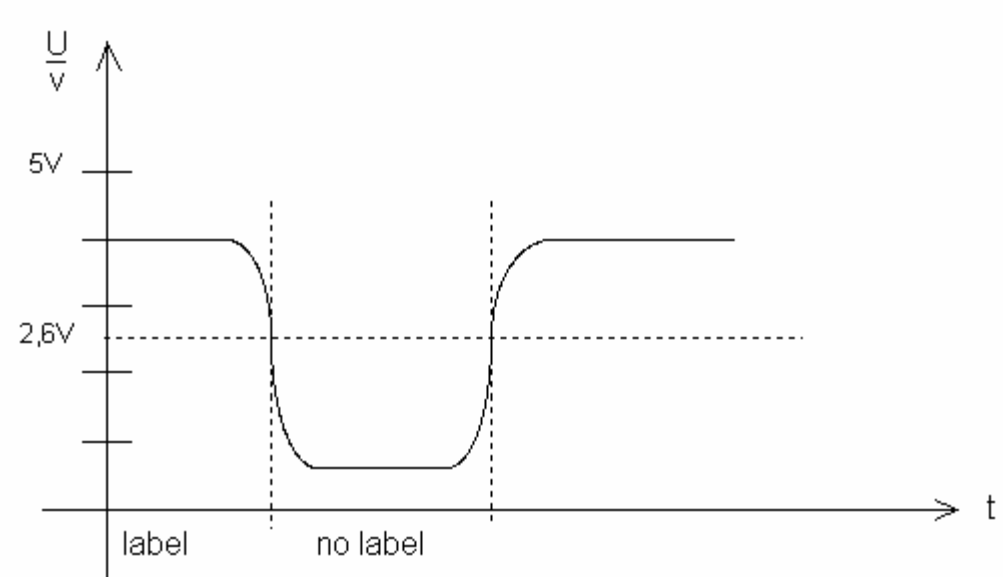


The "INPUT" level can be displayed in menu item "Service functions" (label parameter) under LS: x,x. The marking should have a size of at least 7 mm x 3 mm or bigger.

Dispensing photocell

ST9:	PIN 1	VCC	5V
ST9:	PIN 2	INPUT	see sketch
ST9:	PIN 3	PULL-UP	~ 1,2V
ST9:	PIN 4	GND	0V

The typical voltage wave form at "INPUT" (measurable at ST5 PIN 9) is shown in sketch 3.



As standard a level of 2,5 V is adjusted. If a label is under the dispensing photocell, the level at"INPUT" must be higher than 2,5 V. If the label is removed, the voltage must lower under 2,5 V.

In some cases it is necessary to change the level of the dispensing photocell. This can be done in menu item "Printer initialisation - LS switching level".

The "INPUT" level can be displayed in the menu item "Service functions" (label parameter) under CP: x, x.

Ribbon check

ST10:	PIN 1	VCC	5V
ST10:	PIN 2	IN	High res. Low
ST10:	PIN 3	PULL-UP	~ 1,2V
ST10:	PIN 4	GND	0V

The photocell "Ribbon check" checks whether the ribbon is moving. By that alterate high and low signals are measurable at "IN", which should have a ratio as much as possible of 1:1.

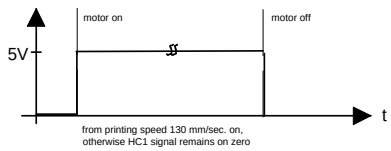
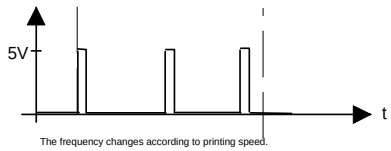
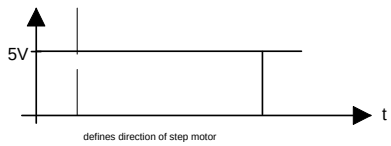
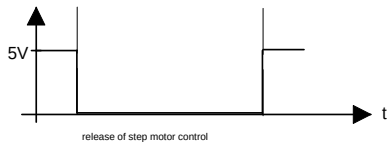
The "IN" level can be displayed in menu item "Service functions" (label parameter) under RCR and is measurable at ST5 PIN 8 on the CPU.

1.6.4. Clock signals

check-point		description		value
U1	PIN 11	CLK	CPU	25 res. 32 MHz
	PIN 12	CLK	CPU	
U30	PIN 15	RESET		0V
	PIN 16	RESET		~ 5V
U1	PIN 24	NMI		0V

1.6.5. Motor signals

Motor for paper feed

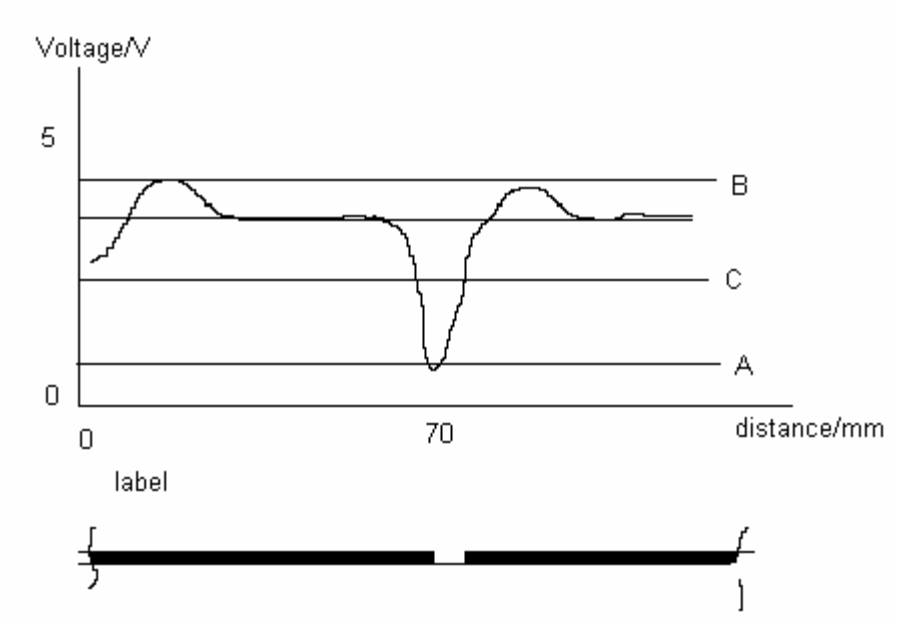
check-point (CPU)		check-point (power supply)		description	value
ST5	PIN16	ST3	PIN16	HC1	
	PIN17		PIN17	CLK1	
	PIN18		PIN18	DIR1	
	PIN19		PIN19	ENABLE1	

1.7. Service monitor

1.7.1. Valuation of label parameters

In function menu "Service functions" you will find the service monitor, by which the photocells can be checked res. adjusted.
When measuring the labels the values will be displayed in the first line, thereby the following measured voltages are shown:

A: absolute minimum (measured on backing-paper)
B: smallest maximum (measured on label)
C: upper/lower switching level



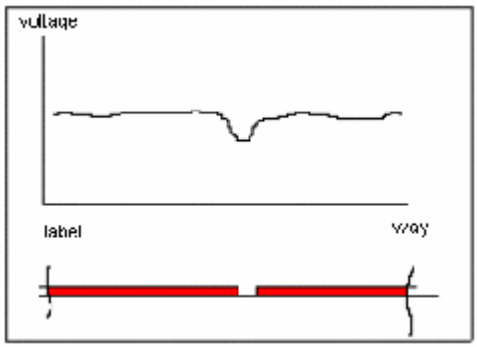
The sketch illustrates the voltage wave form of the label photocell while measuring the label.
The difference between "A" and "B" should be at least 1,5 V.

1.7.2. Error message: label error

Possible reasons of the error message "Label error" are the following:

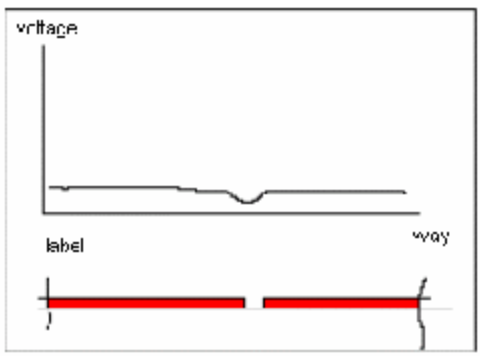
- Too thick res. opaque backing paper

  In this case the value of A will be too high. This means that the printer cannot distinguish between label and backing paper.



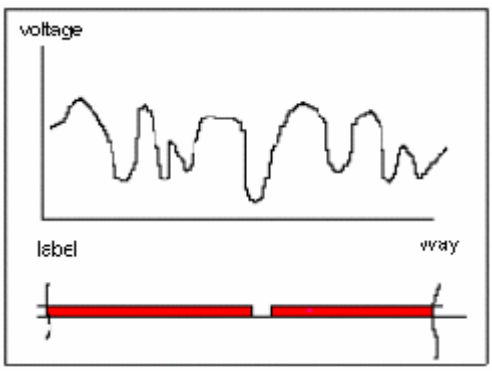
- Very thin label material

  In this case the value of B is too low, so that the printer cannot distinguish between backing paper and label.



- Pre-printed label with strong differences in contrast

  Pre-printed labels are a particular problem. Here the fluctuations of voltage on the label while measuring are very high. In this case the value of B will be very small. In case the difference between B and A is too small, the printer is not able to measure the label.



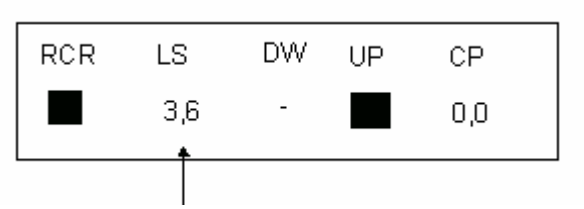
1.7.3. Error elimination

In case the photocell had already been adjusted so that the difference between A and B has received the highest possible value (as described in chapter "1.6.3. Photocells") the "sensitivity of the label photocell" can be adjusted.

1.7.4. Monitor

After activating the key again in menu "Parameter of label photocell" the photocell monitor will be activated.

On the display of the printer the following appears:



The digit represents the measured voltage in volts.

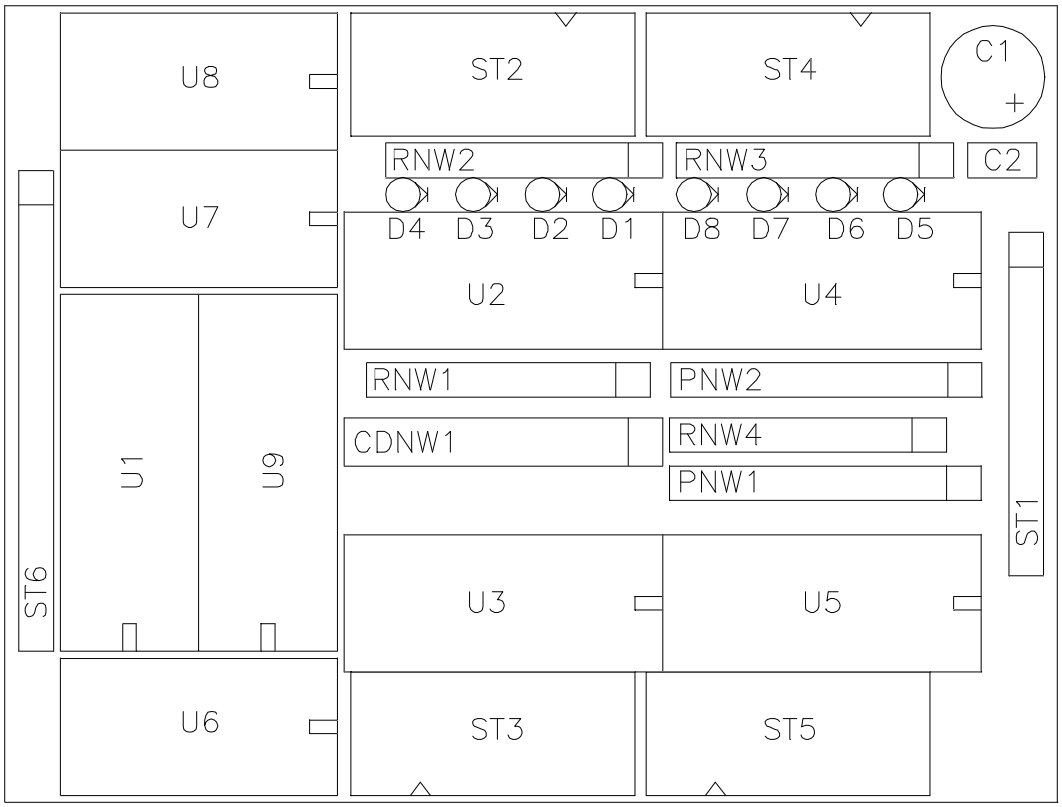
The monitor serves to check the label photocell to its function. As well it is possible to move the label manually under the photocell to get an idea of the voltage wave form and to be able to judge whether the label can be measured.

The difference of backing paper and label should be higher than 1,5 V.

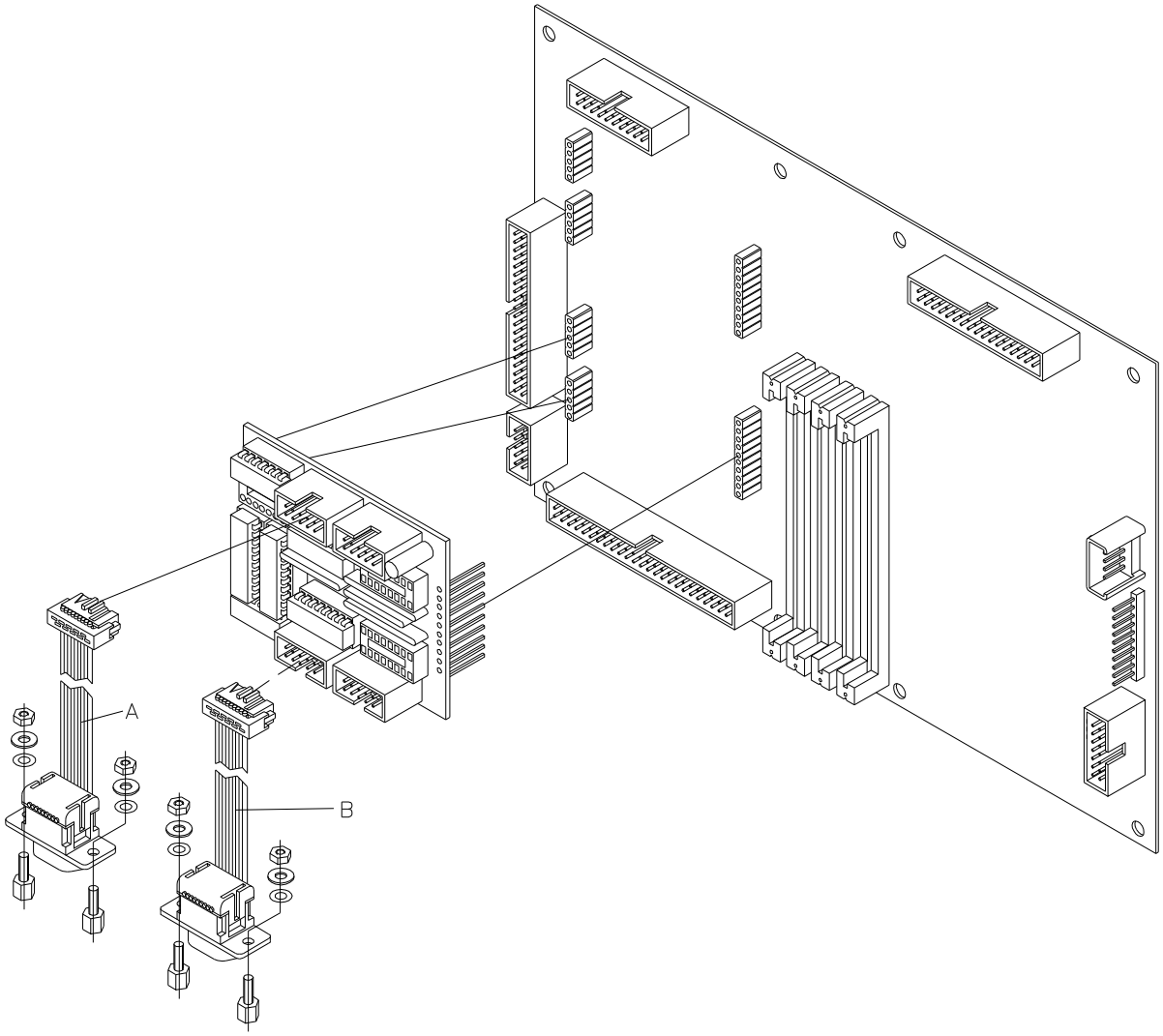
2. Options

2.1. External inputs / outputs

2.1.1. Component parts external I/O's



2.1.2. Installation external I/O's



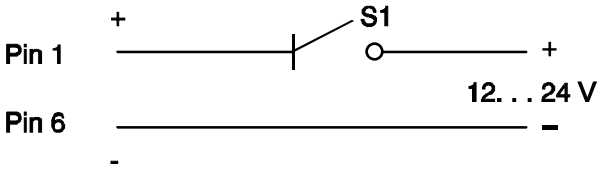
▹ Connect circuit board with components to the CPU.

▹ Mount the connecting cable at the rear panel and connect it to the circuit board
(position of connectors on rear panel, see chapter "1.4. Connector assignment rear panel").

2.1.3. PIN assignment of DSUB connections

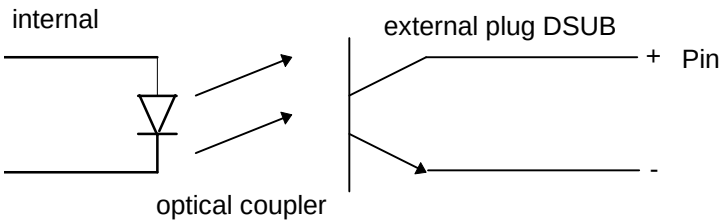
a) Inputs (9-pin DSUB plug)

Pin		description of signal
1	+	INPUT 1
6	-	
7	+	INPUT 2
2	-	
8	+	INPUT 3
9	-	
4	+	INPUT 4
3	-	



b) Outputs (9-pin DSUB receptacle)

Pin		description of signal
9	+	OUTPUT 1
5	-	
8	+	OUTPUT 2
7	-	
6	+	OUTPUT 3
2	-	
4	+	OUTPUT 4
3	-	

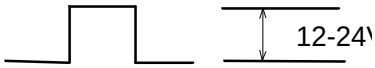
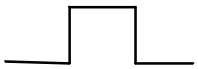
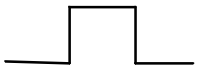
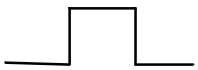
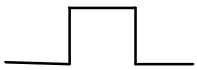
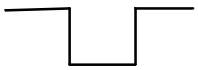
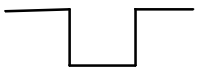
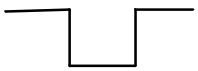
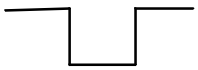


The in- and outputs are galvanic separated and have to be fed by external power supplies.
In function menu "Service functions" the in-/outputs can be checked.

```
IN-12345678  OUT-12345678
   ----------      ----------
```

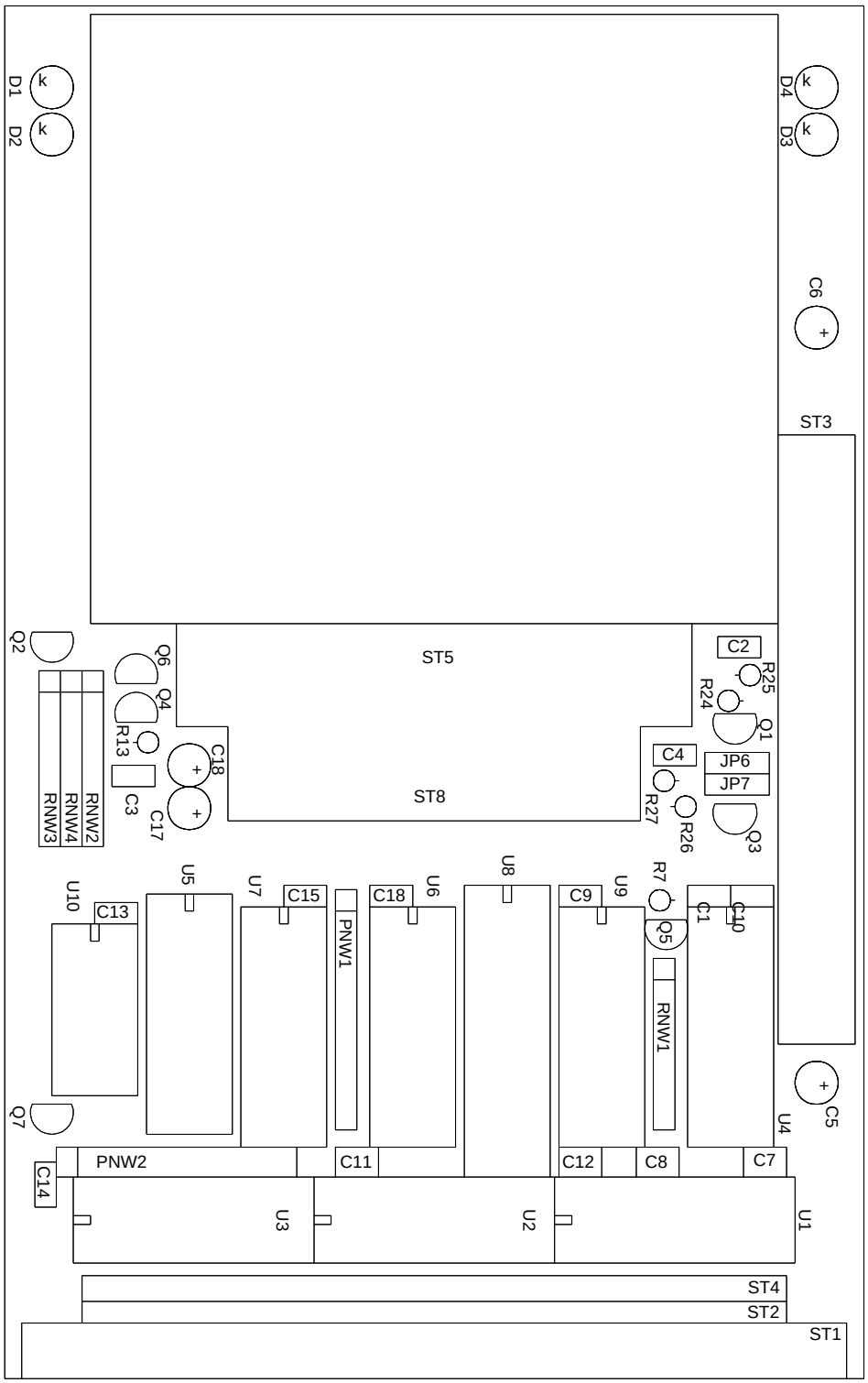
In case an input is activated this will be shown in the display. If an output is to be activated this can be done by pressing the key of the desired output (e.g. activation of output 3, press key 3).
The output is deactivated by pressing the key again.

2.1.4. Check-points

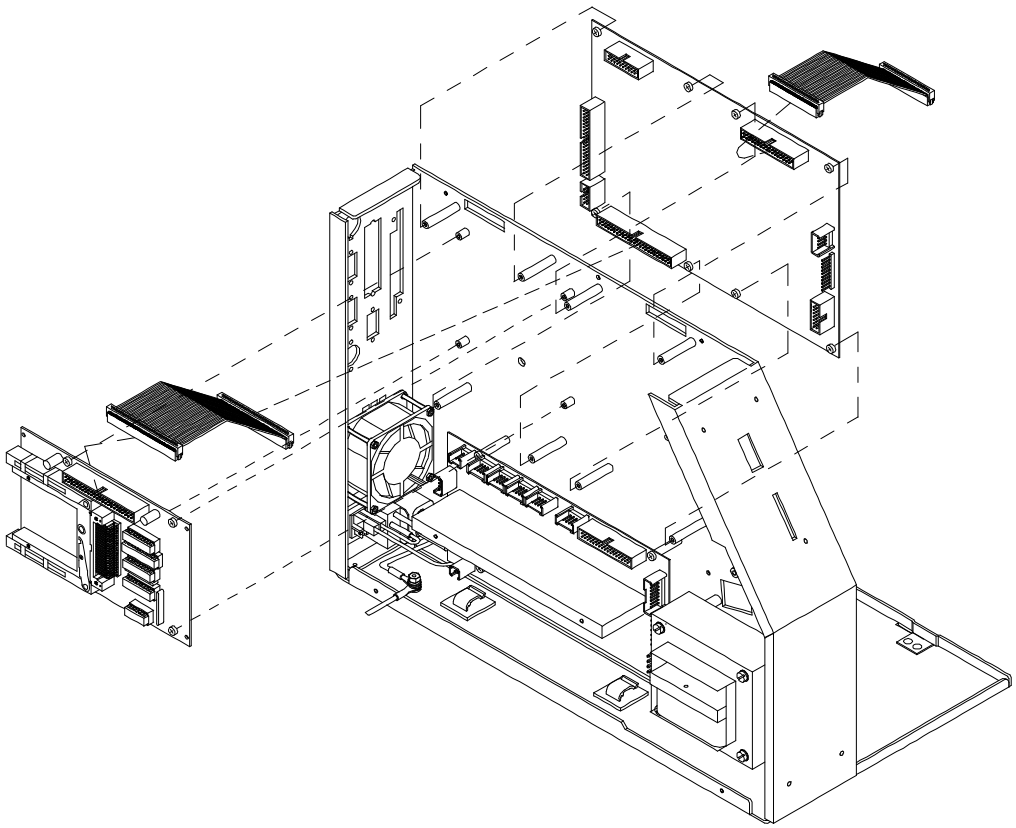
check-point		description	value
4 x IN (1 - 4)		ext. input impulse	
U6	PIN2	INPUT 1	
	PIN4	INPUT 2	
	PIN6	INPUT 3	
	PIN8	INPUT 4	
4 x OUT (1 - 4)			
U3	PIN2	OUTPUT 1	
	PIN3	OUTPUT 2	
	PIN6	OUTPUT 3	
	PIN7	OUTPUT 4	

2.2. PC-Card

2.2.1. Component parts PC-Card



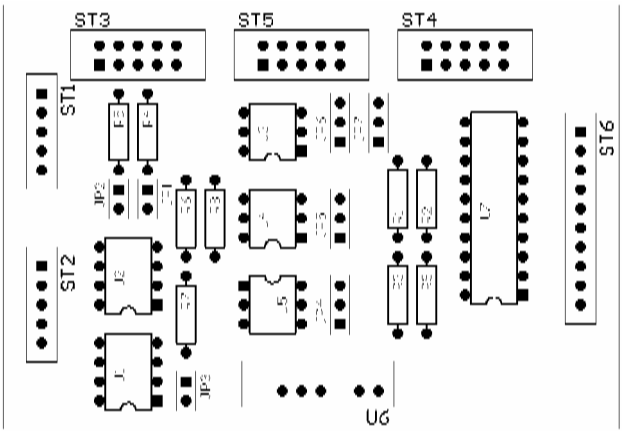
2.2.2. Installation PC-Card



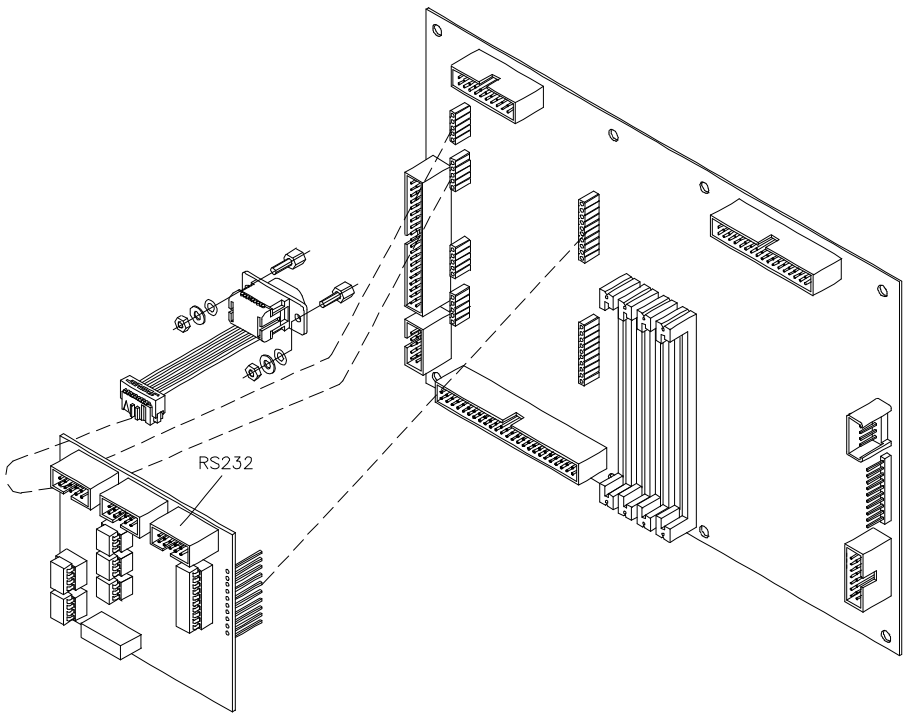
- ▷ Switch off the printer.
- ▷ Open cut-out of rear panel for PC-Card board.
- ▷ Install PC-Card board (see sketch) and insert connecting cable.

2.3. RS 485

2.3.1. Component parts RS 485

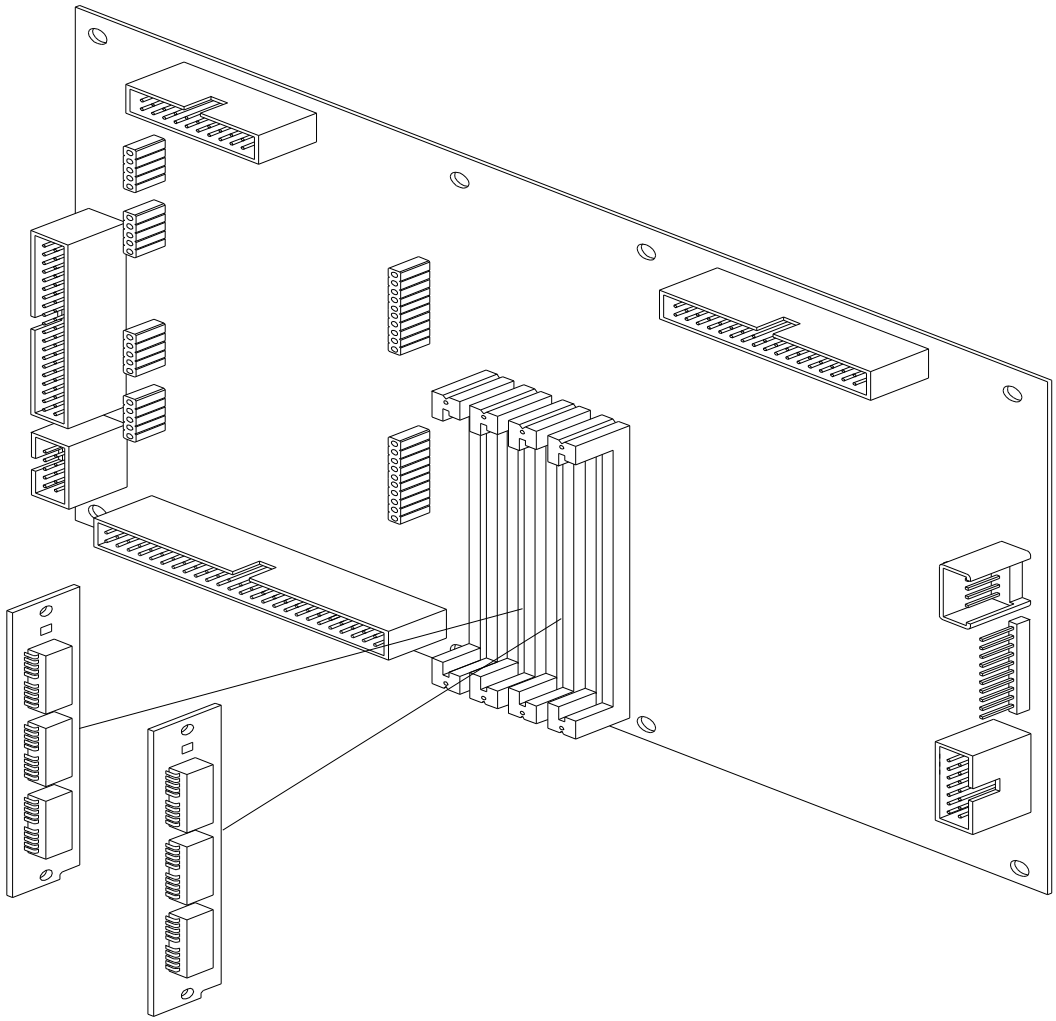


2.3.2. Installation RS 485



- ▹ Connect circuit board with components on CPU (see sketch above).
- ▹ Screw connecting cable to rear panel (position of RS 232) and connect it to circuit board (position of connecting plug on rear panel see chapter "1.4. Connector assignment rear panel").

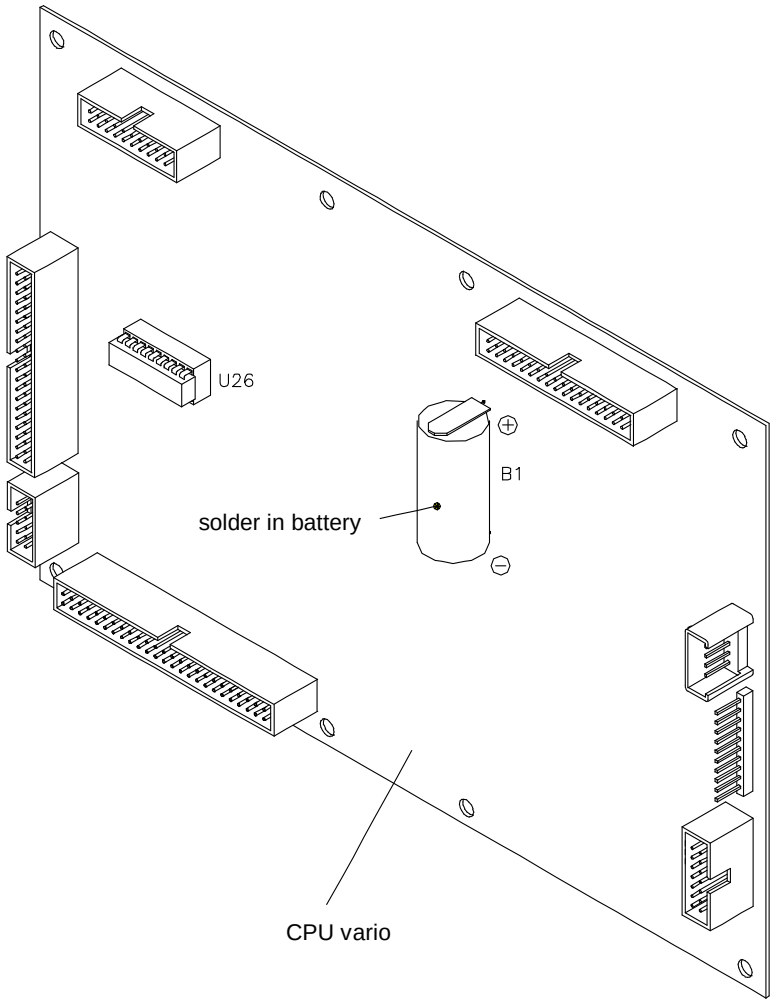
2.4. Extension of RAM



Installation:

- ▷ Switch off the printer.
- ▷ Insert SIMM modules into socket.
  The modules always have to be installed in pairs, either in the two inner or the two outer plugging positions.

2.5. Date/Time

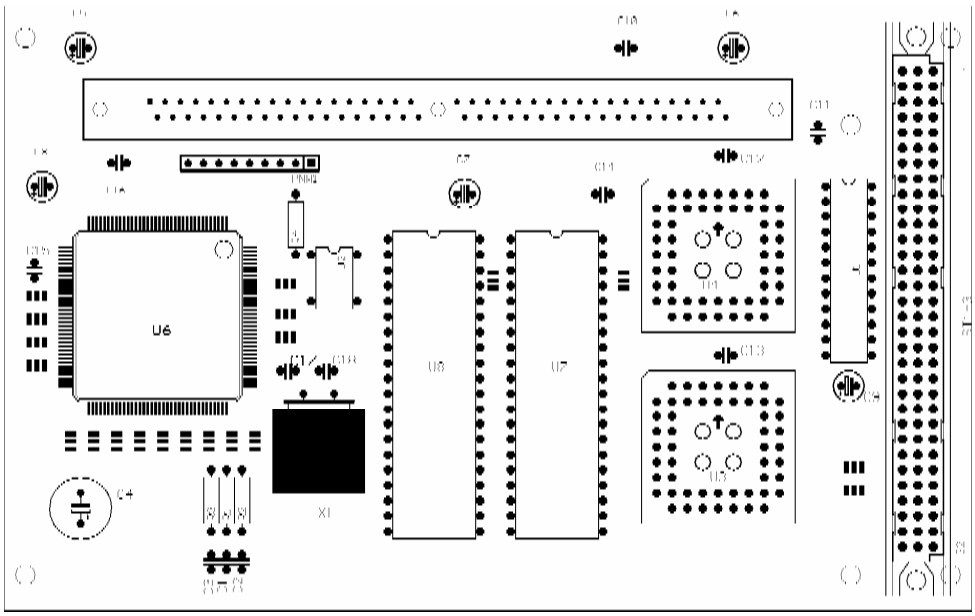


Installation:

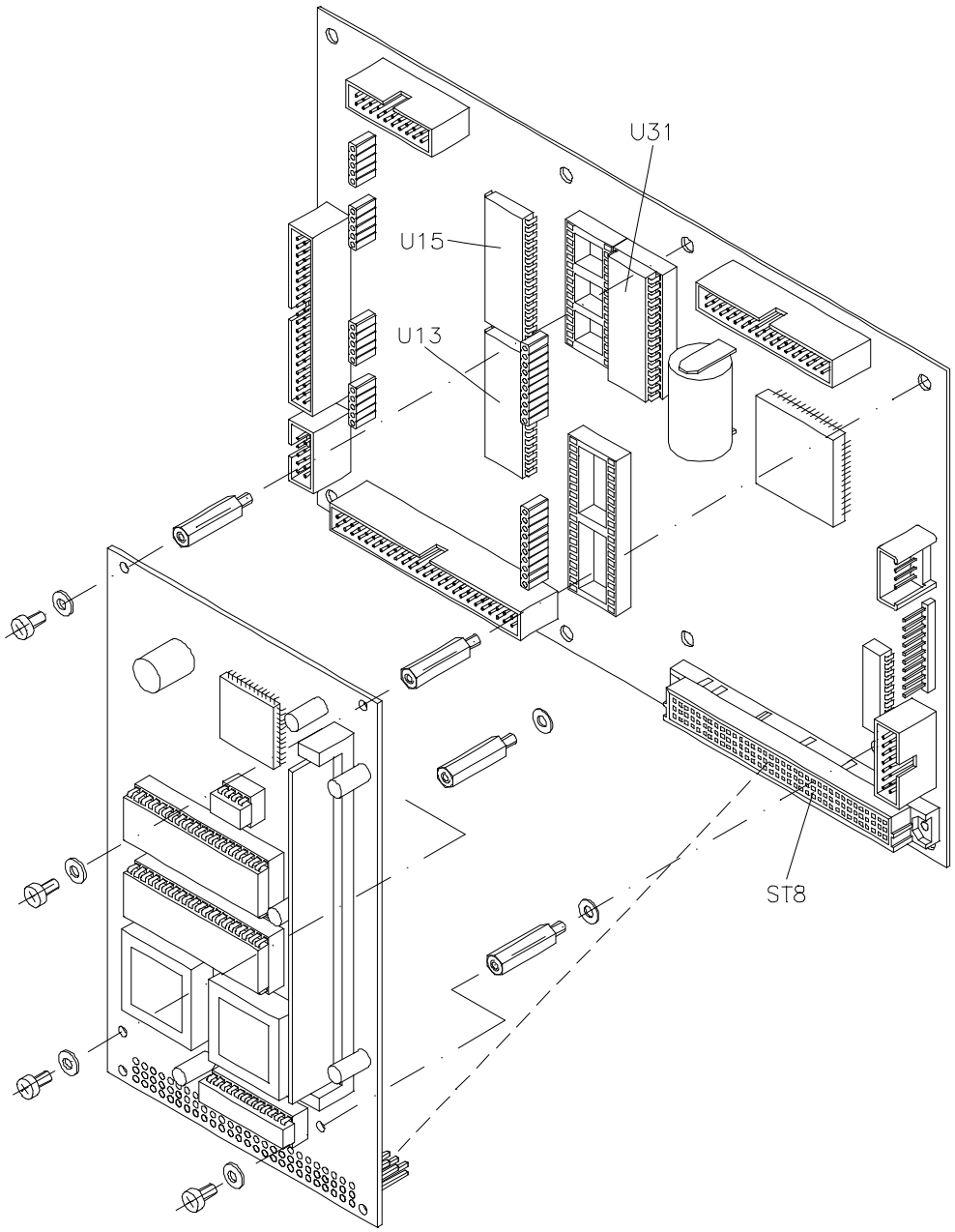
- ▷ Switch off printer and remove CPU.
- ▷ When soldering in battery B1 pay attention to direction of polarization!
- ▷ Insert RTC 72421A in socket (note the marking PIN1!).
- ▷ Reinstall CPU and set the time in menu item "Date/Time" (see operating manual).

2.6. Extension of RISC

2.6.1. Component parts RISC



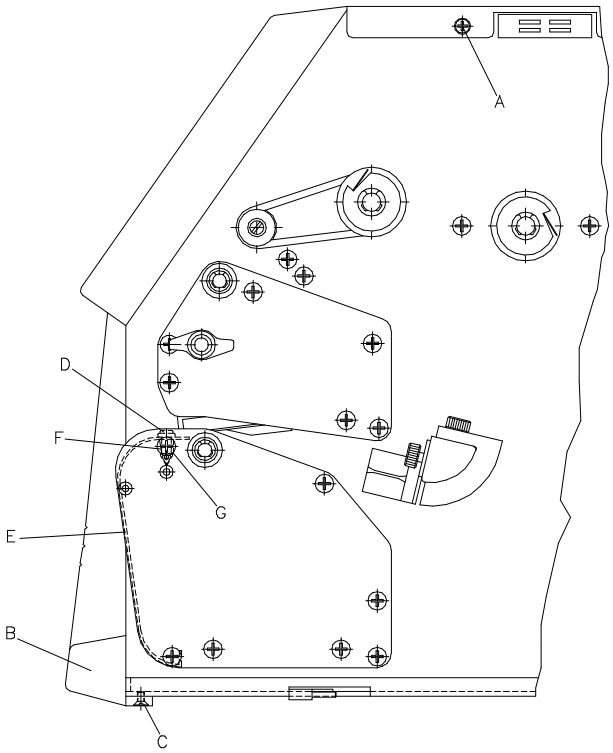
2.6.2. Installation RISC

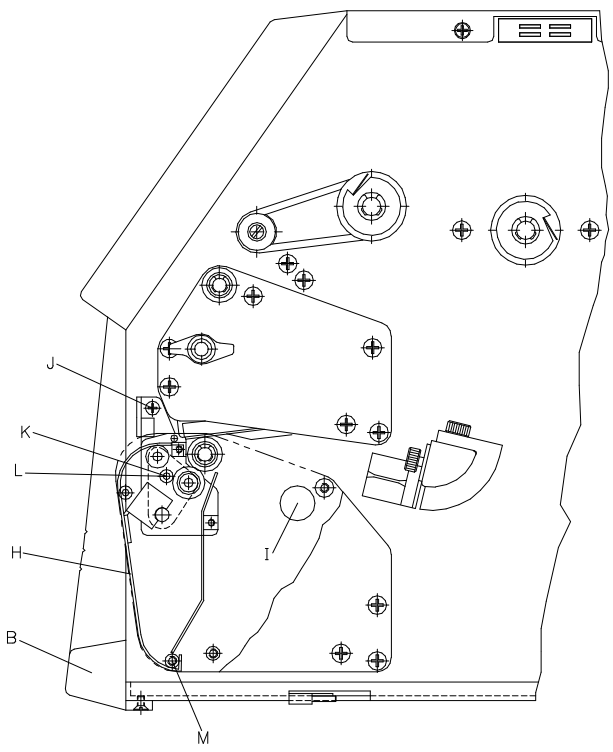


- ▷ Switch off the printer.
- ▷ Remove components U15 and U13.
- ▷ The font Eprom U31 may as well be removed as the RISC processor disposes of an own font Eprom.
- ▷ Loosen mounting screws at the board and screw in spacers.
- ▷ Put RISC board into socket ST8 and fix it with mounting screws.
- ▷ Switch on the printer.
  Besides the printer type the display additionally shows the identification '++' for the RISC processor.

2.7. Dispenser

2.7.1. Retrofitting of dispenser





Preparation of standard printer:

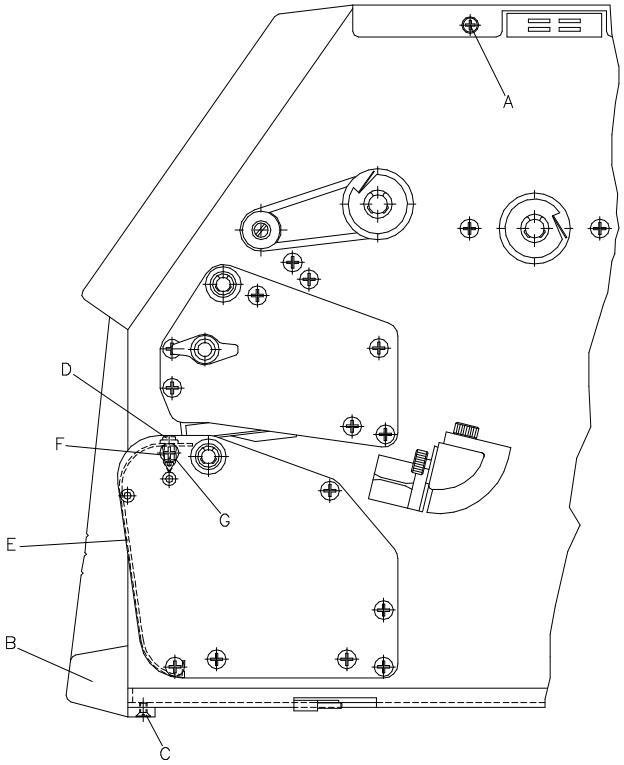
- ▷ Switch off printer, plug out!
- ▷ Remove left cover after removing 2 screws at the left lower printer edge and 2 screws at the chassis top edge (A) next to the magnets (in the sketch there is only shown 1!).
- ▷ Remove cover of power unit after taking off the 2 screws (not shown in the sketch!).
  Hereby remove the connection for the grounded conductor inside the cover of the power unit.
- ▷ Take off the small front panel (B) after removing the 2 screws (C).
- ▷ Lift the above pin tops of the two-piece plastic rivet (D) approximately 3 mm by means of a pincer or a small screw driver. After removing the two rivets the front panel (E) can be taken off.
- ▷ Remove countersunk screw (F) with a fork spanner SW6 while holding the tear-off (G). Turn the tear-off (G) to the front and remove it from the chassis drill hole.

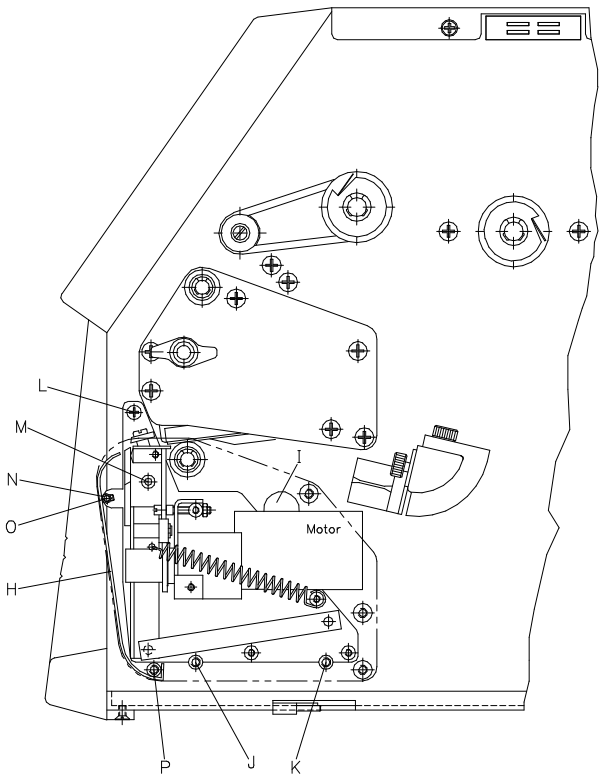
Installation of dispenser conversion kit:

- ▷ Remove front panel (H) from the conversion kit (usually enclosed not fixed!).
- ▷ Put dispensing unit in front of the printer and lead the photocell cable through the drill hole of the chassis.
- ▷ Push dispensing unit carefully backwards until the mounting holes (J, K) are truly aligned.
  Caution: When installing the dispensing unit don't damage the pressure roll!
- ▷ Fix the dispensing unit at the printer with the enclosed screws (J, K [chassis], L [sole plate outside]).
- ▷ Pull the photocell cable and put it in the connector shell ST9 (at the top edge of the power unit plate next to the plug of the ribbon photocell).
- ▷ Suspend front panel (H) in spacer shaft (M), turn it upwards and snap it with slight pressure.
- ▷ Reinstall small front panel (B).
- ▷ Reinstall cover of power unit and left cover.
- ▷ Settings for dispensing mode according to operating manual.

2.8. Cutter

2.8.1. Retrofitting of cutter





Preparation of standard printer:

- ▷ Switch off printer, plug out!
- ▷ Remove left cover after removing 2 screws at the left lower printer edge and 2 screws at the chassis top edge (A) next to the magnets (in the sketch there is only shown 1!).
- ▷ Remove cover of power unit after taking off the 2 screws (not shown in the sketch!). Hereby remove the connection for the grounded conductor inside the cover of the power unit.
- ▷ Take off the small front panel (B) after removing the 2 screws (C).
- ▷ Lift the above pin tops of the two-piece plastic rivet (D) approximately 3 mm by means of a pincer or a small screw driver. After removing the two rivets the front panel (E) can be taken off.
- ▷ Remove countersunk screw (F) with a fork spanner SW6 while holding the tear-off (G). Turn the tear-off (G) to the front and remove it from the chassis drill hole.

Installation of cutter conversion kit:

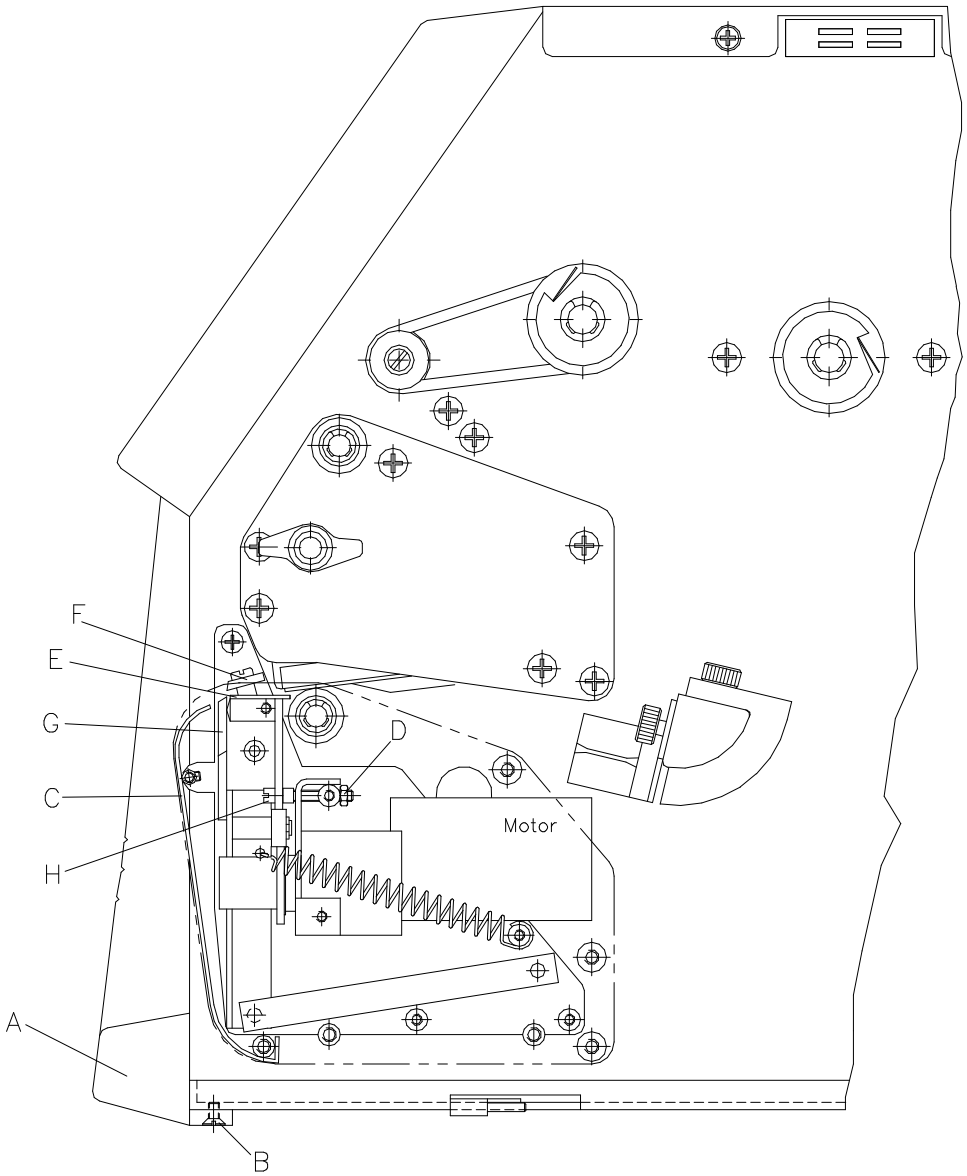
Caution: Danger of injury while working at the cutter!

- ▷ Remove front panel (H) from the conversion kit (usually enclosed not fixed!).
- ▷ Put cutter unit in front of the printer and lead the cable motor/photocell through the drill hole of the chassis (I).
- ▷ Put the cutter with the sole plates on the spacer shaft (J).

  Caution: When installing the cutter don't damage the pressure roll!
  Due to functional reasons the distance between chassis and outer sole plate is kept small. Therefore it might take some efforts to pull in the cutter unit! However, do not knock it in with supporting material as this could change the printing quality.

- ▷ Push cutter unit carefully backwards until it snaps with the cutouts of the sole plates in the spacer shafts (J, K)! Therefore the cutter unit has to be slightly pushed down!
- ▷ Pull the cable motor/photocell and put it in the connector shell ST 1 (on the power unit plate near the fan).
- ▷ Fix the cutter at the printer with the enclosed screws (L, M).
- ▷ Put the front shaft (N) into the drill hole of the left sole plate of the cutter unit at fix it at the printer with screw (O).
- ▷ Suspend front panel (H) in spacer shaft (P), turn it upwards and fix it at the front shaft (N) with the 2 enclosed countersunk screws.
- ▷ Reinstall small front panel (B).
- ▷ Reinstall cover of power unit and left cover.
- ▷ Settings for cutting mode according to operating manual.

2.8.2. To adjust cutter



Caution: Danger of injury while working at the cutter!

- ▹ Switch off printer, plug out!
- ▹ Remove small front panel (A) after removing the 2 screws (B).
- ▹ Take off the 2 countersunk screws at the front panel (C) and remove it.
- ▹ Loosen counternut (D).
- ▹ Insert a piece of paper or labels between lower plate (E) and fixed cutter ledge (F), then manually push the movable cutter ledge (D) upwards and control the cutting.

Attention: The cutter has to start cutting approx. 5 mm from the left edge of the fixed cutter ledge.

▷ **The cutter cuts further on the right side:**
Tilt the movable cutter ledge (G) to the front (Caution: danger of injury!) and turn adjusting screw (H) in clockwise direction until the nominal position is reached. Push back the cutter ledge.

▷ **The movable cutter ledge (G) strikes the fixed cutter ledge (F):**
Tilt the movable cutter ledge (G) to the front **(Caution: danger of injury!)** and turn adjusting screw (H) against clockwise direction until the nominal position is reached. Push back the cutter ledge.

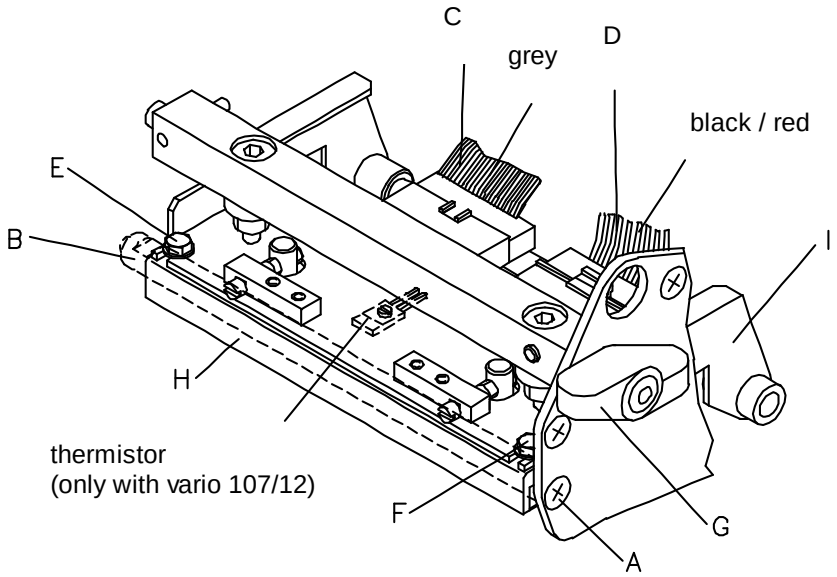
▷ Tighten counternut (D).

▷ Reinstall front panel (C) and small front panel (A).

▷ Turn on printer and test cutter function.

3. Mechanics

3.1. Exchange of printhead



Attention: For exchange of printhead the ESD regulations have to be observed!

- ▹ Switch off the printer, plug out!
- ▹ Remove countersunk screw (A) on the left side of the shaft with a fork spanner SW5,5 while holding the straight shaft (B). Turn straight shaft (B) on the right side to the front and remove it from the chassis drill hole.
- ▹ Pull off printhead plug including cables (C, D).
- ▹ Unscrew screws (E, F) about 3 rotations with a fork spanner SW5,5.
- ▹ Lift printhead bracket with printhead by turning lever (G) against clockwise direction.
- ▹ Draw off printhead and intermediate layer (H) to the front.
- ▹ After removing the 4 countersunk screws (vario 104/8 only one screw!) that are now visible the printhead can be taken off the intermediate layer (H).

Installation:

▷ Installation of the new printhead and all further components in opposite order.

▷ Switch on the printer.

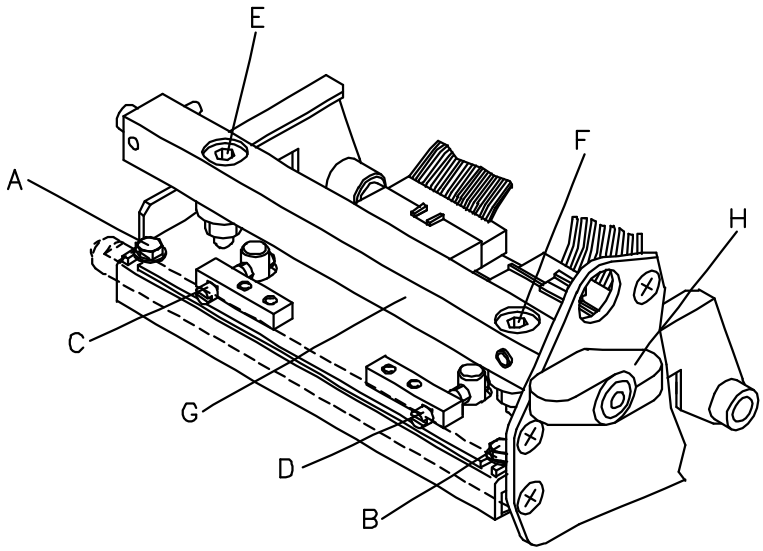
▷ Enter the resistance value of the new printhead in function menu "Service functions" menu item "Heater resistance". You will find this value on the name plate of the printhead (R = XXXX Ω).

▷ Control the position of the printhead with a test print. In case the test print is not satisfactory adjust printhead!

Attention:

- Do not touch the contacts of the printhead!
- If available apply heat-conducting paste according to old printhead.
- While installing pay attention that the thermistor cable lies in the cut-out of the intermediate layer (H)!
- Pay attention that the guiding on the bottom side of the printhead bracket (I) is correctly in the slot of the intermediate layer (H)!

3.2. Adjustment of printhead



3.2.1. Parallelity

- ▹ Loosen screws (A, B) about ½ rotation with fork spanner SW5,5.
- ▹ The parallelity can be set with the adjusting screws (C, D). If you turn in clockwise direction the printhead moves forward, if you turn against clockwise direction the printhead moves backward.
- ▹ Depending on the print quality of the test print adjust until the print quality is correct.
- ▹ Tighten screws (A, B).
- ▹ Start print order with approx. 10 labels and control the correct, wrinkle free ribbon. In case of wrinkles the parallelity has to be checked again.

3.2.2. Pressure

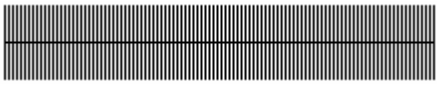
Avoid increase of printhead pressure as much as possible because too high pressure damages the printhead and decreases its life time.
The pressure is set from the manufacturer according to the specification of the printhead.

Print quality too faint (even when using highest contrast):
The pressure can be increased by turning the adjusting nuts (E, F) with an Allen key SW2,5 in clockwise direction. Tilt the pressure roll (G) to the front by turning the lever (H) against clockwise direction. Control print quality after each ¼ rotation.

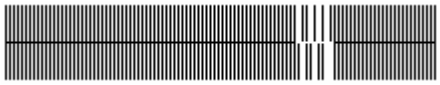
3.3. Cleaning of printhead and pressure roll

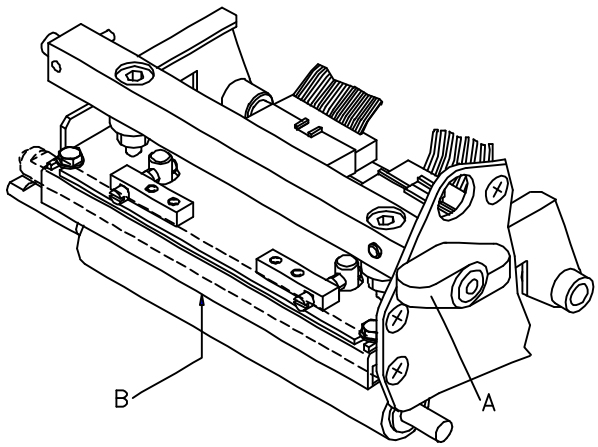
Principally it is advisable and necessary to clean the printhead in regular intervals depending on the printer's operating hours and its environment (e.g. dust etc.).
With a test print it can be easily found out whether the printhead is soiled or defective.

a) printhead is o.k.



b) printhead is defective/soiled





Attention: While cleaning the printhead the printer has to be switched off!

- ▹ Turn up the printhead bracket with the printhead by turning the lever (A) against clockwise direction.
- ▹ Clean the lower surface of the printhead (B) with dry cleaning solvent. As expedient a close-woven cotton cloth is recommended. In case this procedure is not sufficient the printhead can be cleaned with a special cleaning foil (to be obtained from us under ref. Nr. 97.14.008).
- ▹ Close printhead bracket with printhead by turning lever (A) in clockwise direction.

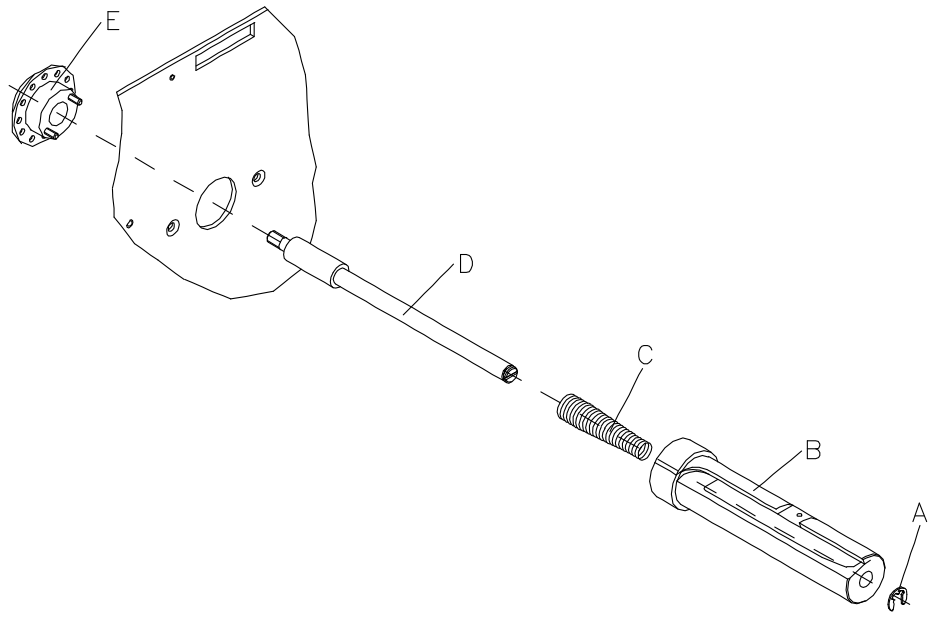
Warning: The printhead is very sensitive, therefore scratching res. strong rubbing is absolutely to be avoided. Rough or hard subjects may not be used for cleaning!

Cleaning of pressure roll:

- ▹ In certain intervals the pressure roll has to be cleaned with spirit (dust, soil etc.). In order to do so the printhead has to be turned up.

Attention: Possible remains of adhesive etc. **may not** be scratched off the pressure roll with sharp subjects (e.g. knifes)!

3.4. Exchange of ribbon unwinding roll

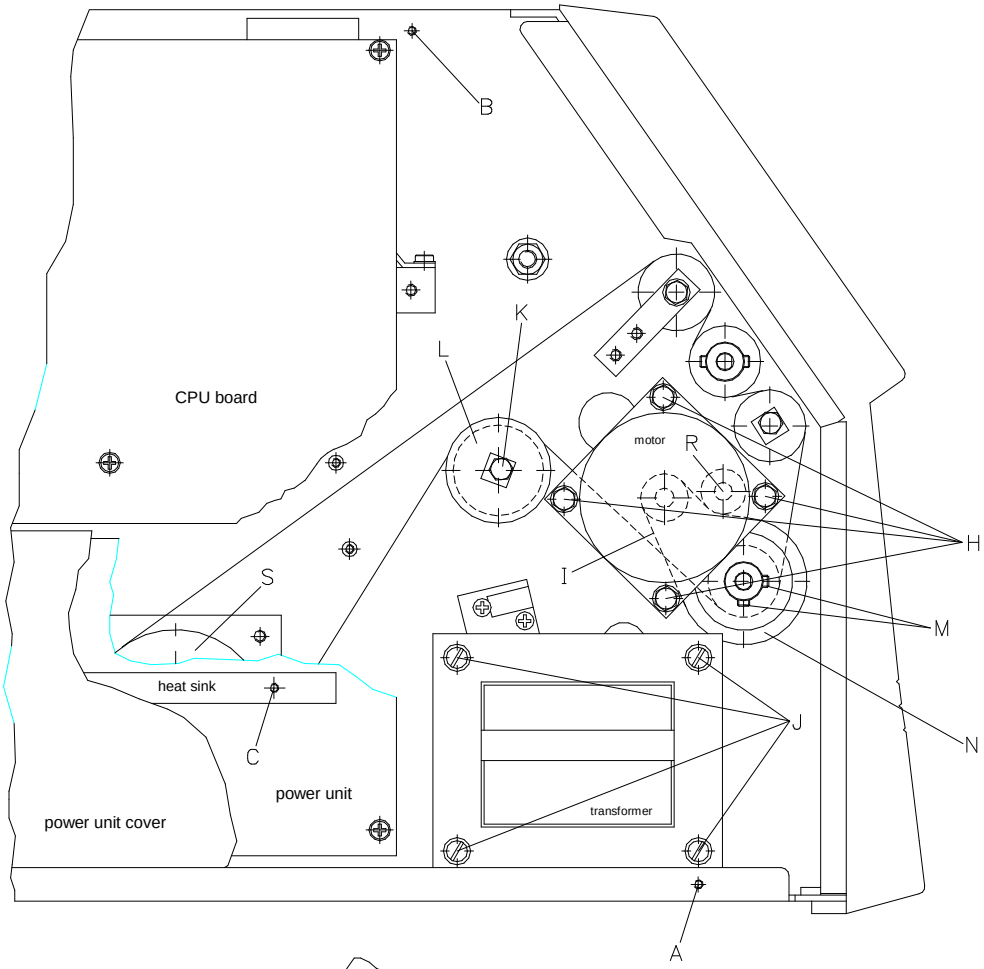


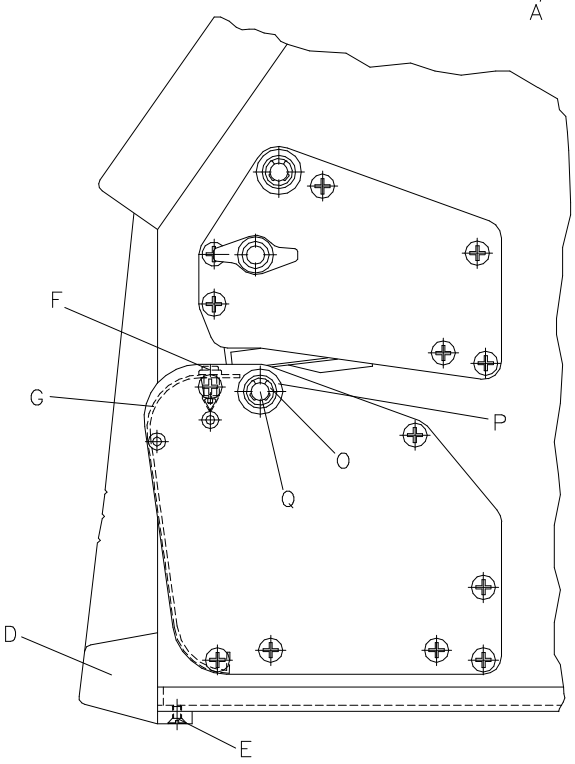
- ▹ Switch off the printer, plug out!
- ▹ Take off locking washer (A).
- ▹ Turn unwinding roll (B) in clockwise direction and pull it outwards the pillar (D) at the same time.
  Caution: Danger of injury at thin spring steel plate.
- ▹ In case spring (C) remains in unwinding roll, pull it outside with rotary motion at the same time.

Installation:

- ▷ Lubricate pillar (D) and push spring (if possible a new one) approximately to the middle of the pillar.
- ▷ Lubricate spring from outside.
- ▷ Turn the ribbon unwinding roll by **clockwise rotations** onto the spring. Finally insert the screws of the striker arm (E) into the drill holes of roll (B).
- ▷ Fix locking washer (A).
- ▷ Turn the ribbon unwinding roll approx. 2 - 3 rotations in clockwise direction and then release it. The roll has to turn back approx. 180°.

3.5. Exchange of pressure roll





- ▷ Switch off printer, plug out!
- ▷ Remove left cover after removing 2 screws at the left lower printer edge (A) and 2 screws at the chassis top edge (B) next to the magnets (in the sketch there is only shown 1!).
- ▷ Take off cover of power unit after removing the 2 screws (C), only the integral nut is shown. Hereby remove the connection of the grounded conductor inside the cover of the power unit.
- ▷ Take off the small front panel (D) after removing the 2 screws (E).
- ▷ Lift the above pin tops of the two-piece plastic rivet (F) approximately 3 mm by means of a pincer or a small screw driver. After removing the two rivets the front panel (G) can be taken off.
- ▷ Put the printer on its right side.
- ▷ After removing the hexagonal head screws (H) take off the motor. Hereby disconnect the short cogged belt (I) as well as the connector motor / power unit ST2.

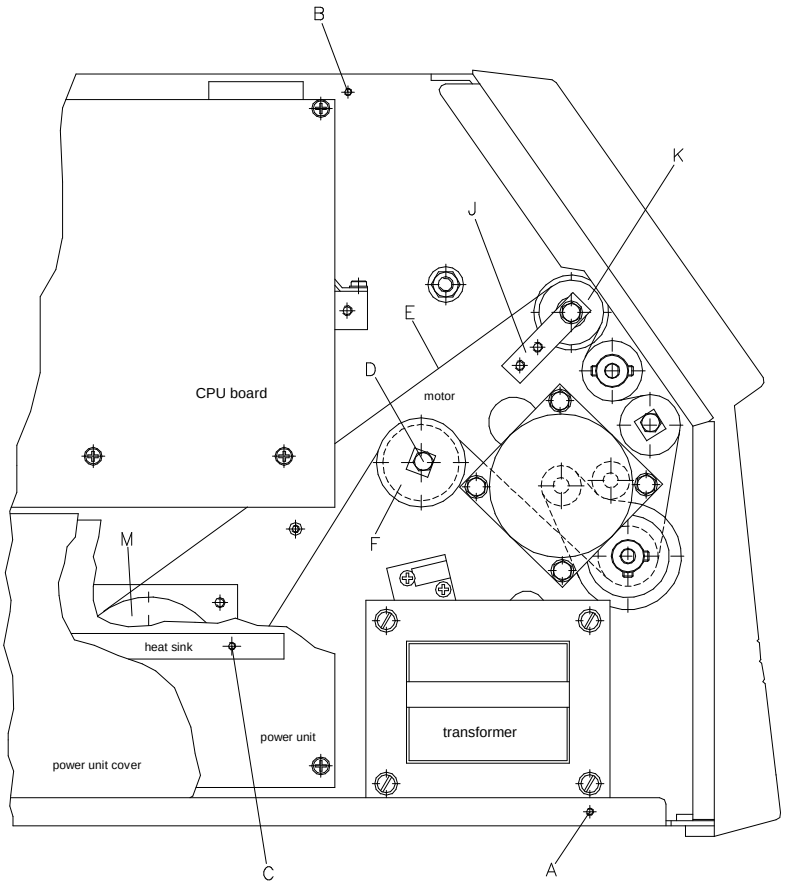
  Only vario 107/12 The cogged belt drive on the shaft is partly situated behind the transformer. Therefore it is recommended to take off the transformer after removing the 4 screws (J). The connector transformer / power unit ST6 has to be disconnected.

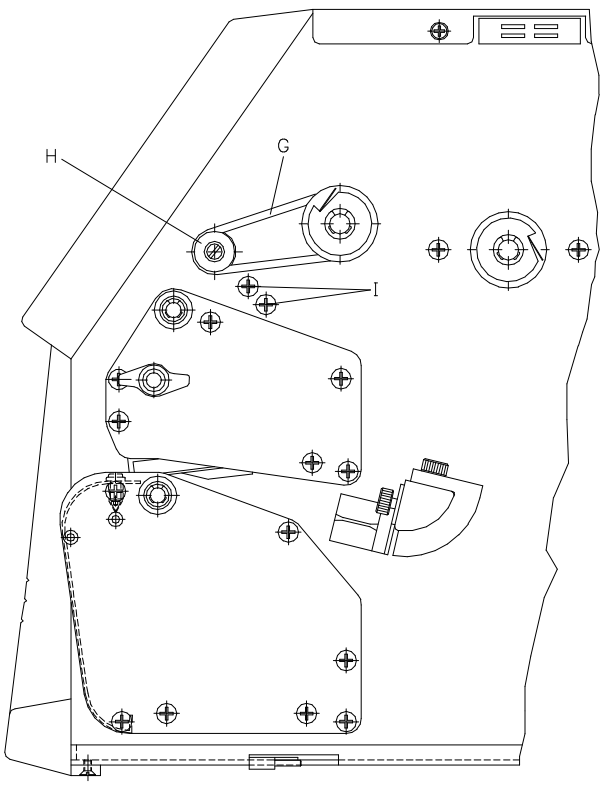
- ▷ Loosen screw (K) so that the long cogged belt is flexible on the bogie wheel (L).
- ▷ Loosen locking screws (M) and remove cogged belt drive (N) with spacing washer and ball bearing from the roll shaft.
- ▷ Set up the printer.
- ▷ Remove safety washer (O) and ball bearing (P).
- ▷ Take the pressure roll (Q) out of the print mechanics.

Installation:

- ▷ Installation of new roll and reinstallation of all components in opposite order.
- ▷ It is advisable to clean ball bearing in dry cleaning solvent and then lubricate it anew!
- ▷ When reinstalling cogged belt drive (N), regard that locking screw (M) meets the milled surface of the roll shaft.
- ▷ Tighten the long cogged belt with the eccentric bearing and screw (K) so it can be raised approx. 5 mm above bogie wheel (L). In case the belt cannot be tightened, it has possibly slid off the cogged belt drive (S) (see chapter "3.7. Exchange of cogged belt").
- ▷ Draw the motor to the left top and fix it with screws to tighten the short cogged belt (I).
  Vario 107/12: Take care that the belt is correctly lead over the tension roller (R).

3.6. Exchange of ribbon drive



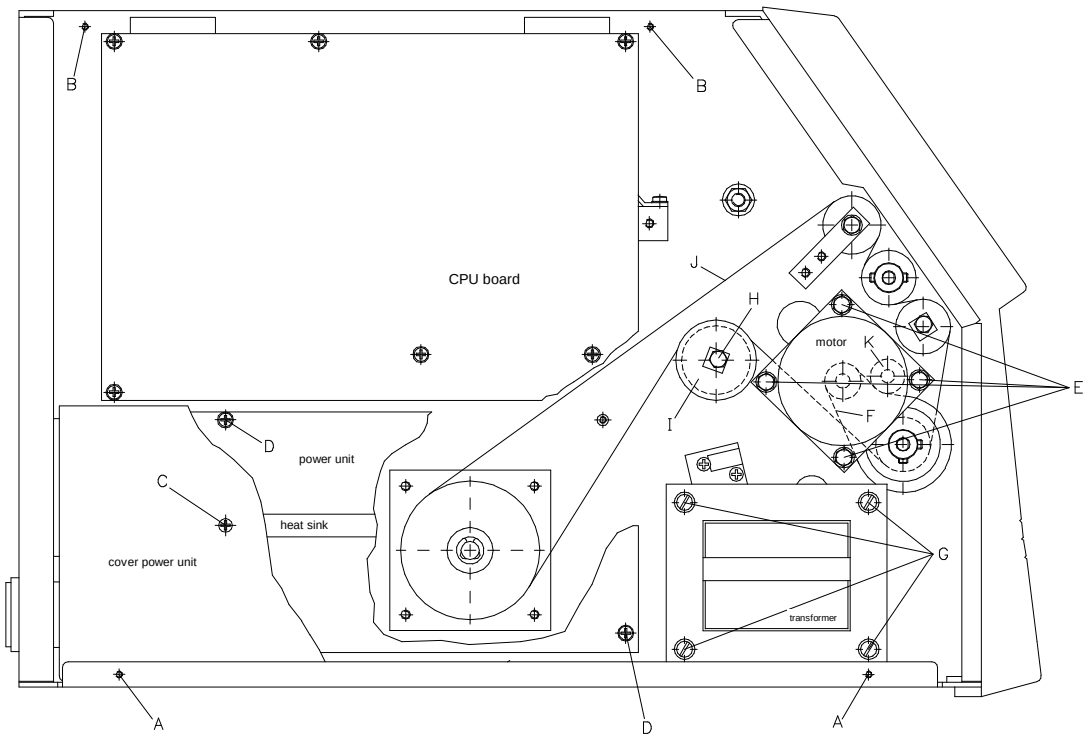


- ▷ Switch off printer, plug out!
- ▷ Remove left cover after removing 2 screws at the left lower printer edge (A) and 2 screws at the chassis top edge (B) next to the magnets (in the sketch there is only shown 1!).
- ▷ Remove cover of power unit after taking off the 2 screws (C), only the integral nut is shown. Hereby remove the connection of the grounded conductor inside the cover of the power unit.
- ▷ Pull out cable for foil keyboard and display on the CPU (ST7, ST10).
- ▷ Loosen screw (D) so that the long cogged belt (E) is flexible on the bogie wheel (F).
- ▷ Remove vulcollan belt (G) from drive (H).
- ▷ Take off 2 screws (I).
- ▷ Put the printer on its right side.
- ▷ Pull out drive bearing (J).
- ▷ Take belt drive (K) with integrated drive off the chassis drill hole. In case the cogged belt interferes, the bogie wheel (F) can as well be completely removed.

Installation:

- ▷ Installation of new ribbon drive and reinstallation of all components in opposite order.
- ▷ When reinstalling the belt drive (K), the cheek plate has to point inside.
- ▷ When reinstalling, the drive (H) has to be centered in the chassis drill hole.
- ▷ Tighten the long cogged belt (E) with the eccentric bearing and screw (D) so it can be raised approx. 5 mm above bogie wheel (F). In case the belt cannot be tightened, it has possibly slid off the cogged belt drive (M) (see chapter "3.7. Exchange of cogged belt").

3.7. Exchange of cogged belt



- ▹ Switch off printer, plug out!
- ▹ Remove left cover after removing 2 screws at the left lower printer edge (A) and 2 screws at the chassis top edge (B) next to the magnets.
- ▹ Remove cover of power unit after taking off the 2 screws (C), only one is shown in the sketch. Hereby remove the connection for the grounded conductor inside the cover of the power unit.
- ▹ Put the printer on its right side.
- ▹ Pull out all cable connections from the power unit plate.

  Important: Pay attention to the position of the plugs and cables for the purpose of reinstallation!

- ▹ Take off power unit plate after removing 4 screws (D).
- ▹ Take off motor after removing hexagonal head screws (E). Hereby take off the short cogged belt as well.

  Only vario 107/12: The cogged belt drive on the pressure roll is partly situated behind the transformer. Therefore it is recommended to take off the transformer after removing the 4 screws (G).

- ▹ Loosen screw (H) and take off eccentric bearing with bogie wheel (I).
- ▹ Take off cogged belt (J) from the remaining belt drives.

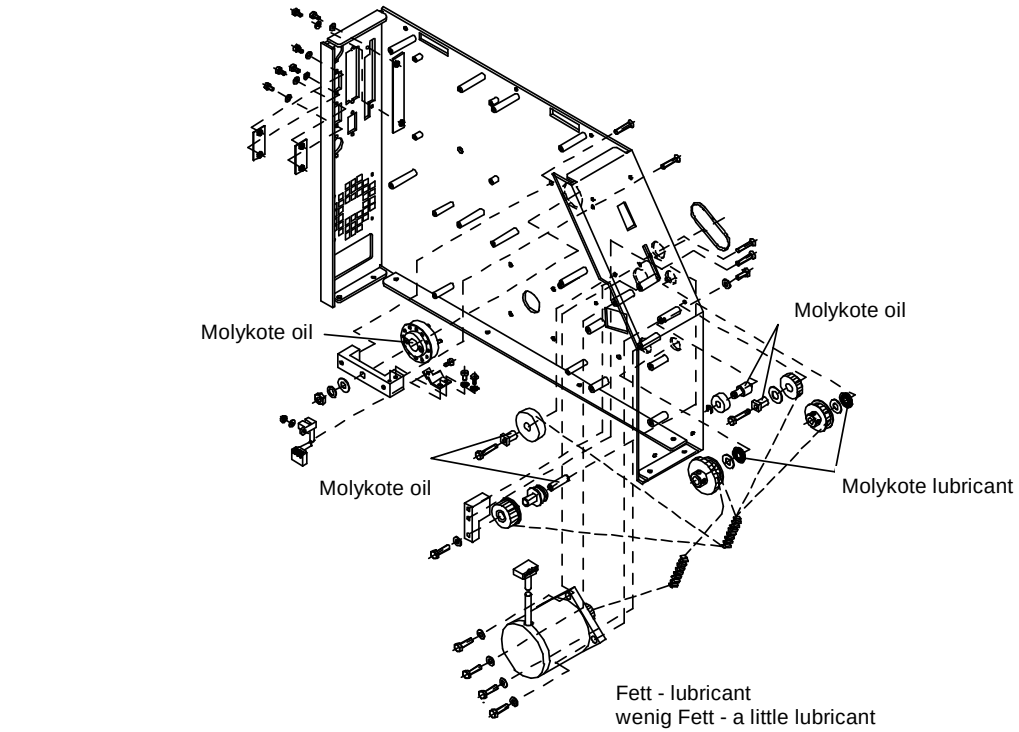
Installation:

- ▷ Installation of new cogged belt and reinstallation of all components in opposite order.
- ▷ Tighten the long cogged belt (J) with the eccentric bearing and screw (H), so it can be raised approx. 5 mm above bogie wheel (I).
- ▷ Draw the motor to the left top and fix it with screws to tighten the short cogged belt (F).
  Vario 107/12: Take care that the belt is correctly lead over the tension roller (K).

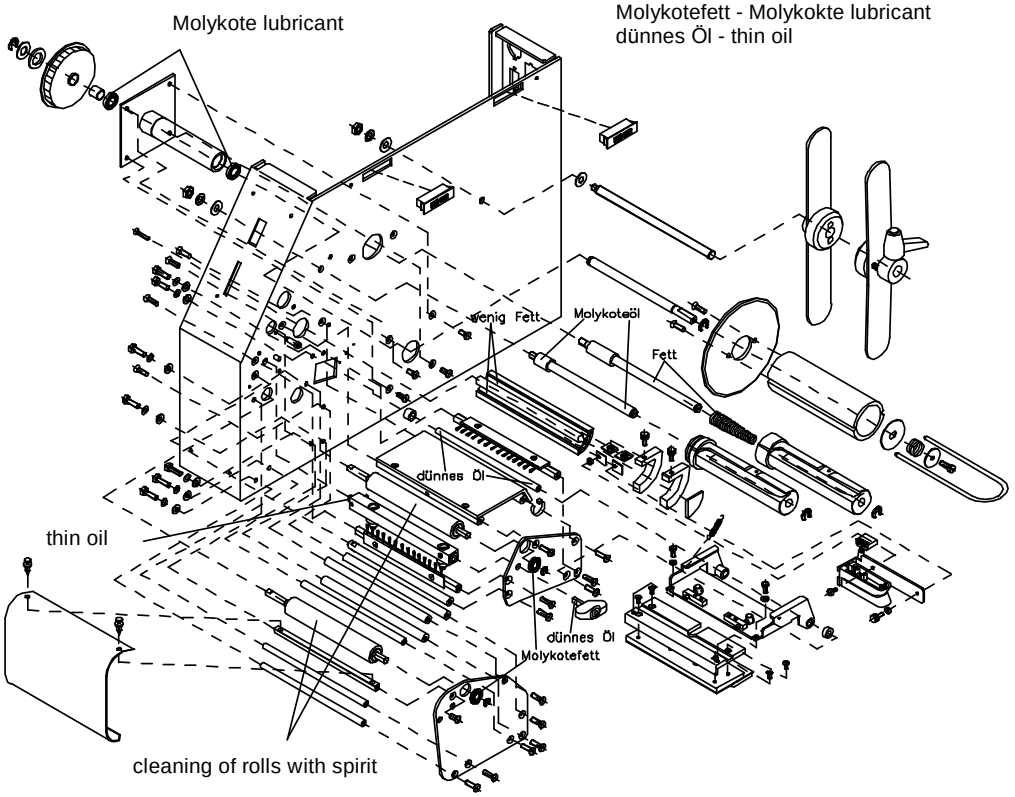
3.8. To oil and lubricate

In the following all oil and lubricate points of the printer are shown.

Note: It is advisable to oil and to lubricate the printer completely twice a year!



Fett - lubricant
wenig Fett - a little lubricant
Molykoteöl - Molykote oil
Molykotefett - Molykokte lubricant
dünnes Öl - thin oil

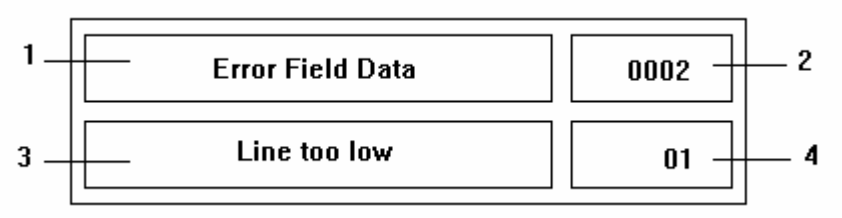


4. Possible sources of error

4.1. Display

In case of error the following display will appear:

Example:



1	Error categories	
	• unknown error • label error • system error • data error • ribbon error	• error interface • error field data • error memory • error parameter • error print parameter
2	Number of error	
	The number of error is indicated, see table of errors chapter "4.2. Table of errors".	
3	Text	
	Specification of the error occured.	
4	Line number, MC-Slot	
	Indication where res. in which line the error occured.	

4.2. Table of errors

number of error	possible causes	how to solve the problem
1	• line completely/partly projects the upper label rim	• place the line in a lower position (Y↑) • check rotation, font
2	• line completely/partly projects the lower label rim	• place the line in a higher position (Y↓) • check rotation, font
3	• line completely/partly projects the left label rim	• move the line to the right (X↑) • check rotation, font
4	• line completely/partly projects the right label rim	• move the line to the left (X↓) • check rotation, font
5	• one/more characters of the text is/are not included in the selected font	• change text • change font
6	• one/more characters of the text is/are not included in the selected font	• change text • change font
7	• impossible to match the text into the selected field	• check field size
8	• internal error	• Please contact your distributor.
9	• the selected type of text is not available	• check type of text
10	• the selected code is not available	• check type of code
11	• the selected position is not available	• check position
12	• the selected font is not available	• check font
13	• the font EPROM does not support the selected language	• check language • Please contact your distributor.
14		
15	• error in font EPROM	• Please contact your distributor.
16	• error in font EPROM	• Please contact your distributor.
17	• error in font EPROM	• Please contact your distributor.
18	• error in font EPROM	• Please contact your distributor.

number of error	possible causes	how to solve the problem
19	• when measuring label the difference between label and backing paper is too small	• adjust label photocell (distributor) • change sensitivity
20	• when measuring no label found • the selected label length is too high	• remeasure • check label length
21	• while printing no marking/gap found	• check label
22	• while printing ribbon is empty • defective ribbon photocell	• change ribbon • check ribbon photocell in menu service • check ribbon sensitivity
23	• loss of data at serial interface (RS 232)	• check Baudrate • check cables (on printer and PC)
24	• parity error	• check parity • check Baudrate • check cables (on printer and PC)
25	• stopbit error	• check stopbits • check Baudrate • check cables (on printer and PC)
26	• received line number invalid with RS 232 / Centronics	• check data sent • connection PC - printer
27	• invalid length of received mask statement	• check data sent • connection PC – printer
28	• invalid mask statement	• check data sent • connection PC – printer
29	• missing ETB	• check data sent • connection PC – printer
30	• invalid length of received code statement	• check data sent • connection PC – printer
31	• invalid length of received command statement	• check data sent • connection PC – printer

number of error	possible causes	how to solve the problem
32	• illegal statement	• check data sent • connection PC – printer
33	• entered/received check digit is faulty in check digit control	• recalculate check digit • check code data
34	• selected SC code invalid with EAN/UPC	• check SC code
35	• entered number of characters invalid with EAN/UPC Code < 12; > 13	• check number of characters
36	• type of check digit not available with selected code	• check digit control • check type of code
37	• not readable printer parameter	• check serial EEPROM (service)
38	• printer parameter cannot be stored	• check serial EEPROM (service)
39	• selected zooming factor invalid	• check zooming factor
40	• entered sign of offset invalid	• check offset value
41	• entered offset value invalid	• check offset value
42	• printhead temperature too high • defective temperature sensor of printhead	• contrast ↓ • change printhead (service)
43	• error cutter, paper jam	• check label guiding • check cutter
44	• entered characters are not conform to the characters allowed by the application identifiers	• check code data
45	• application identifier not available with EAN 128	• check code data
46	• continuous mode selected, printer received a command statement via interface, where number of lines < 2. Label length is missing.	• don't select continuous mode or transmit dummy line with Y-coordinates = label length (see interface manual)
47	• connection CPU – Memory-Card interface has been interrupted • Memory-Card interface defective	• check connection CPU – Memory-Card interface • check Memory-Card interface

number of error	possible causes	how to solve the problem
48	• Memory-Card not or not correctly entered	• enter Memory-Card
49	• wrong type of Memory-Card entered (8/16 Bit)	• check card type (has to be 16 Bit)
50	• charge of battery / accumulators can cause loss of data on the Memory-Card	• change battery (attention, loss of data!)
51	• battery / accumulators empty	• change battery (attention, loss of data!)
52	• "Write-Protect"-switch on Memory-Card is on position "ON"	• deactive write protection
53	• Memory-Card not formatted	• formate Memory-Card
54	• no files on Memory-Card	
55	• file does not exist on Memory-Card	• search through the contents of the Memory-Card and select the desired file name • check directory and device
56	• invalid characters in the file name	• check characters
57	• max. storage space of Memory-Card is reached	• use a new Memory-Card • delete files on Memory-Card that are no longer needed
58	• max. number of main directory entries is reached	• at least one main directory entry has to be deleted, then create subdirectories
59	• selected file includes no graphic dates	• check file name
60	• selected file includes no label dates	• check file name
61	• invalid directory name	• check directory name
62	• selected directory already exists	• check directory name
63	• you tried to delete the actual directory	• change directory
64	• directory to be deleted is not empty	• first delete all files in the directory
65	• selected subdirectory does not exist	• check directory name

number of error	possible causes	how to solve the problem
66	• RTC function has been selected, though no RTC is installed in the printer • RTC defective	• check selected function, add RTC ram • exchange RTC ram
67	• no print memory found	• check memory standard on CPU board
68	• max. storage space of Memory-Card is reached	• delete files that are no longer needed
69	• internal error	• Please contact your distributor.
70	• wrong format entered for variable line	• check format string
71	• wrong format entered for date/time	• check format string
72*		
73*		
74*		
75*		
76	• different software standard of graphics processor / main processor	• Please contact your distributor.
77	• different software standard of graphics processor / main processor or hardware error	• Please contact your distributor.
78	• connected barcode scanner signals device error	• check connection scanner / printer • check scanner, possibly defective
79	• bad print quality • printhead completely soiled or defective • printing speed too high	• increase contrast • clean printhead or exchange if necessary • decrease printing speed
80	• scanned character sequence is not identical with character sequence to be printed, due to possibly missing dots a false barcode was printed	• exchange printhead
81	• definition of counter variables invalid, entry of inadmissible characters as counter	• check characters of counter in text statement • check counting mode

* IDS error